University News

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S.K. GANDHE

The Institution and the State

KIRAN SANDHU

Sports Careers
— An Emerging Profile

D.N. SANSANWAL & S. SAXENA

Thinking and Decision Making

P.V. NARASIMHA RAO

Distance Education
— The Panacea for all Problems

U.R. RAO

The Currency of Power
— Convocation Address

CONTEST FOR TEACHER TRAINERS

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ANIMALS IN SCIENTIFIC RESEARCH

Association of Indian Universities

T.A. PAI MANAGEMENT INSTITUTE, MANIPAL

ANNOUNCES ADMISSION TO THE THIRTEENTH

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1995 – 97

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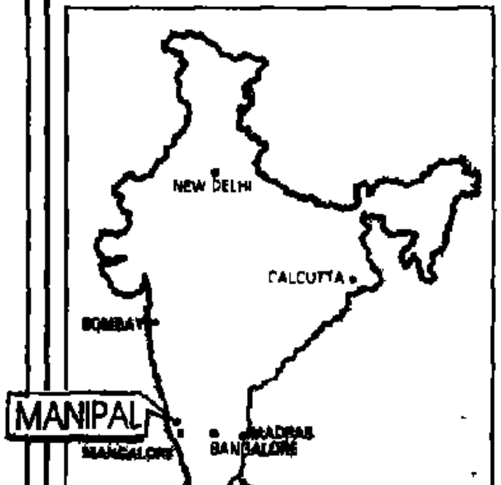

Manipal has a picturesque location on the Karnataka Coast on a plateau between the Western Ghats and the Arabian Sea, off National Highway – 17 linking Mangalore and Bombay.

Please write to:

Admissions Co-ordinator
T.A. Pai Management Institute
Manipal – 576 119, Karnataka
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2. Simultaneously, apply to TAPMI, Manipal on the TAPMI application form for admission to the PG Programme
3. Candidates who have applied for admission to TAPMI will be shortlisted on the basis of their CAT scores
4. Final selection will be through Group Discussion and Interview which will be conducted by TAPMI in the second half of April 1995
5. The PGP Session starts in the second week of July 1995

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LAST DATE

The last date for receiving completed application forms by the Admissions Co-ordinator is **December 31, 1994.**

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IN THIS ISSUE

The Institution and the State 1
Sports Careers 4
Thinking and Decision Making 9
Distance Education 11
Convocation
Indian Institute of Technology, Bombay 14
Campus News
Animals in Scientific Research 24
Contest for Teacher Trainers 25
Platform for Action 25
Scholarship on Women's Studies 26
New Oil Extraction Method 27
Agriculture
National Symposium on Meat and Milk Industry 27
News from UGC
Countrywide Classroom Programme 28
Book Review 30
Theses of the Month 32

Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

The Institution and the State

S.K. Gandhe*

There is no seller-consumer type relationship between an educational institution and its students. It is not possible, therefore, for the institution to realise its entire expenditure from the students. Since educational institutions are not commercial bodies and are not expected to make profit out of their working, they are not expected to charge heavily for the tuition given to the students. At one time in our own country, it was considered unethical to charge any fee for imparting knowledge. It was a bounden duty of a certain section of community to impart knowledge to others free of charge. Things have of course changed in the last couple of centuries.

Merit Want

Education is considered by many as a "merit want" which is useful to the society as a whole besides being useful to the student. It is for this reason perhaps that education has always been considered to be the responsibility of the society. Even classical economists like Adam Smith or Marshall have advocated state support for education to the poor who cannot afford it.

While it is accepted in theory that state must aid educational institutions, it is also true especially in a developing country like India that the state does not have adequate financial resources to fund the entire educational system. As early as the early sixties an important commission appointed by the Government of India had recommended that atleast 6% of the GNP may be earmarked for education. However, till about mid-80s the government could provide no more than 2.5% of the GNP for education. In late 1980s the proportion was raised to about 3% and at present it is about 3.5%. Even in this meagre funding a major share is taken by the elementary and the secondary education, the informal education, the vocational education etc. Higher education does not get more than 10% of the total available funds. The proportion of higher education funding has been gradually decreasing from Plan to Plan. In the Fourth Five Year Plan (1969-73) it was 25% of the total plan provision; now in the Eighth Five Year Plan (1992-97) it has come down to 8%.

No educational institution has been able to raise any substantial income from student fees. Though the number of students has steadily increased over the past five decades, the level of fees has more or less remained the same as it existed in the 50s. In many parts of this country the monthly tuition fee in an Arts or Commerce college is as low as Rs. 15, i.e. less than half a US dollar. In most of the universities, the present quantum of fees accounts for not more than 6% of the total annual expenditure. Nor is it possible for the universities to raise the rates of fee. There is no political will to undertake any fee rise. Next to industrial labour, it is the university students who are a well organised group. Almost all the student unions, even though they are affiliated to different political parties, have always worked in unison on the matter

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**Acting Vice Chancellor, Indira Gandhi National Open University, New Delhi-110 068.*

of fee rise. Nothing would bring them together on the same platform more decisively than any attempt to raise fees.

State Funding

Indian universities have no escape from heavy dependence on state funding. Unfortunately however the government funds being highly limited, most of the colleges and universities in India have suffered from insufficient academic infrastructure. The result has been poor quality of education. There is a dichotomy in this country where a very few centres of excellence (Indian Institutes of Technology, Indian Institutes of Management etc.) have been created with large-scale government funding and foreign collaborations, but an overwhelming majority of colleges and universities is poor producer of quality education.

When as large as more than 90% of the funds come from the state, the institutions would naturally tend to abide by the directives of the state. They would also feel accountable to the state rather than to the society at large and much less to the students. Of course it is possible that the state funds may flow in a free manner with no strings attached. In that case the institution may work for the needs of the society and be accountable to the society. Some of them may even work as enlightened and responsible institutions in an atmosphere of self imposed discipline. But there would be other institutions, numerically much larger, which may not respond to the changing social needs but may merely function on the established traditional patterns. They may not have any element of social reforms.

India is a large country and in its federal set up there are as many as 25 states and 7 union territories each one of which may have an independent policy of funding the educational institutions, and which may widely differ from state to state and, within a state, from institution to institution. Many institutions of high repute may have built up over the years a certain amount of clout with the state and may therefore feel relatively free in their working. On the other hand, newer institutions may have to face many restrictions including low level of funding. It is a reality in this country that political influences backing various educational institutions may lead to differential levels of controls and restrictions on the part of the state. It may therefore also be possible that the institutions neither function as completely independent and enlightened units nor as completely isolated dependent ones. One must, however, accept the hypothesis that state policies and pressures do, one way or the other, influence the working of the educational system in India. When the intervention is stressed too far, it becomes a hurdle in bringing about qualitative improvement. In other situations it may even impart dynamism to the functioning of some institutions. It is a mixed bag, indeed.

Financial Autonomy

The discussion so far gives rise to the important question whether the existing system of state funding in India enables educational institutions to maintain their autonomy. I am using the term "autonomy" in the limited sense of financial autonomy which implies, in the context of the educational institutions, a full freedom in the use of the state funds, and to be able to plan their fund-allocations for various programmes according to their own best judgements and not according to the dictates of the state. It also implies that the institutions have the authority to mobilise their own resources in addition to the state funding. In India such authority is highly limited. As stated earlier in this paper, there is hardly any possibility of additional resource mobilisation through fee rise. With the state continuing to be the most important source of financing the higher educational system, financial autonomy implies that the development requirements of the institutions should be respected and met in full by the state. This also means that there should be no rigidity in the availability of funds from the state. Flexibility is an important criterion for an efficient system of state funding of university education, and an indispensable aspect of financial autonomy.

In India there are about 215 universities and institutions deemed as universities of which about 20 are funded directly by the central government while the remaining depend on the state governments. The quantum of funds available for the central universities / deemed central universities is relatively much larger than the funds made available by the state governments to the state universities. However in neither case it could be rightly claimed that the universities have full financial autonomy. Most of the universities suffer from financial crunch and are not able to make up the same by other sources. They are thus at the mercy of the state for additional resources. The governments often do not consider even minimum *additional* requirements while fixing the grants. Even increases in the salaries resultant from revision of the scales of pay at the national or state level are sometimes not admitted in the grants. Monies made available for maintenance of infrastructural and other facilities are generally too inadequate to serve a useful purpose. Increases in price levels are hardly taken into consideration while releasing the grants. Additional needs for men and material are also not considered sympathetically. The system of financing is thus very rigid. There is no timeliness in release of grants and cases are not wanting in numbers when even salaries are not disbursed on time. In many states the grants-in-aid quantums decided several years back have not been revised. In short, the majority of Indian universities do not seem to enjoy any financial autonomy in the real sense. They are, therefore, not free to start new courses of study or to undertake new projects of academic importance. Most of the university acts and statutes contain provision prohibiting the universities to incur any additional financial liability without prior sanction of the state government.

The state governments have their own problems because of the general shortage of funds in their coffers. Some state governments feel that the universities do not exercise any constraint in creating teaching or non-teaching positions which involve long term financial commitments. There are also complaints of over-staffing in several universities. In order to meet financial deficiencies the universities take a recourse to bank overdrafts which involves heavy interest liabilities. It is often argued that the state governments are forced to be very rigid in their financial relations with the universities.

The problem is no doubt complex and evades easy solution. The Government of India has now taken a decision to peg down the financial assistance to the universities at the 1991-92 level, which was the last year of the last Plan. Thus the universities are not in a position to undertake any expansion programmes, much less new innovative or research projects. The only solution to this problem appears to be financial independence of the universities from the state. The universities must make serious efforts to raise their own resources. A recent committee appointed by the Government of India has made (in 1993) the following suggestions for raising their incomes

(a) A gradual but steady increase in tuition fees, other fees, hostel fees, mess fees etc;
(b) Charging university staff for municipal, civic and other services extended to them individually;
(c) Renting out facilities such as auditoria, classrooms, computer services, playgrounds, guest houses, hostels, lawns, messes, etc;
(d) Encouraging individual departments to design programmes and short-term courses of study etc to generate resources without any adverse impact on their main academic activities;
(e) Accepting endowments, contributions, large investments etc to support and promote their academic activities and infrastructural development; and
(f) Supporting research programmes and offering consultancy services to a wide spectrum of sponsors, including departments of central and state government, public and private sectors, industries and other bodies.

Lastly, based on my own close association with the financial budgeting of a state government, I may say that it may be possible to persuade the state governments to give a "golden assistance", meaning thereby a one-time large grant, to the universities. It may then be possible for the universities to invest this large amount in such a way that the annual flow of income therefrom should be sufficient to meet a large part, if not full, of the *operational* expenses of that university. Deficits, if any, can be made up by special efforts towards raising funds from other sources and avoiding avoidable expenses. Perhaps a new senior-level position (say a Pro-Vice-Chancellor) could be created to manage university finances on commercial basis. If this is done, the university will be free from budgetary constraints imposed by the state governments and will have a financial autonomy in the real sense.

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Sports Careers
An Emerging Profile

Kiran Sandhu*

To understand sport as a career one needs to take primary cognizance of 'how sport viewed in a particular society.' Traditionally sport has been concerned with developing qualities of good citizenship, character-building, means to inculcate right attitudes, pride of the nation and the like. But, in general, sport does not offer an encouraging picture of a 'perfect-future' in our society; primarily, because academic qualifications are taken as a little surer qualifications than sports. Secondarily, sport has a limited life span due to its being directly related to one's health status and one has to retire from sports at a specific age. Thus a tendency exists in the society either for an early migration from sport or to give secondary preference to it. Sport in our country provides very limited career outlets and thus a greater risk cannot be taken in it. Above all, the major difficulty in finding the right career seems to stem from a significant lack of awareness of job opportunities in today's rapidly changing society. Hundreds, perhaps thousands, of entry level jobs leading to rewarding careers go unnoticed and unfulfilled because they are not known to the public in general and suitable people in particular. In the background of the present scenario, it has been realised as important to examine the total scope of career opportunities that may be available to individuals having interests in sports, with or without advanced training or higher education. It is attempted to identify opportunities for professionalism in sports. It is hoped that on the basis of such knowledge and awareness, youngsters will be able to make more rational and logical decision concerning their future in sport.

Sports world today has in its fold both, doers and watchers. With people crossing and recrossing the line constantly, sport can provide a broad spectrum of jobs. As a matter of fact, sport performers are much like the heroes and soldiers in action. For every one on the firing line, there are many other people in supportive positions. And in sports, happily, most supportive jobs are rewarding and interesting. If one closely observes the minute description of various jobs associated with sport and physical activity, they look overlapping. The purpose here is not to really provide the readers with a comprehensive list of jobs available, but an attempts is made to enlighten the prospective specialist of sport with the scope of career opportunities available. If a certain career interests someone, then he/she should not wait for a formal degree to come through but should start the professional preparation right away.

Influence of Societal Trends

Till the recent past, careers in sport mainly focused on teaching and coaching in schools, colleges and universities, but now in view of the special efforts being made by the government and the increasing social consciousness towards sport, greater interest has been generated among the public. Besides teaching and coaching careers as popular choices, other areas like sports management, sports medicine, sports media, fitness and health, recreation etc. have thrown up additional career opportunities. For example, sport goods companies designing and testing sport equipments have realized the importance of a biochemist in their trade. Exercise physiologist and physiotherapist are now considered as assets to fitness centres, rehabilitation stations and/or sports medicine cells. In urban India, the work week has been altered to five days as well as higher personal income (two or more salaried households) have resulted in more money to be spent on better education, fitness, leisure and recreational pursuits. The desire to be fit and awareness of concomitant health benefits have stimulated a sizeable portion of society to embark on fitness programmes and engage in a variety of physical activities. Such trends demand leaders trained in exercise science and physical education to conduct relevant activities in an enjoyable manner focusing on values of lifetime.

The varied and increased interest in sport is serving as an impetus to the growth of competitive programmes, which will ultimately lead to better opportunities for officiating and training programmers, sports psychologists, sports managers etc. Likewise sport media as an emerging field will also offer new opportunities of career.

**Indira Gandhi Institute of Physical Education & Sports, New Delhi.*

In view of the changing concept of sport and its management, sport careers offer new and interesting challenges. There is hardly any field that can match sport in the opportunities if affords for something new every day. Tremendous growth of sport in terms of input of services, infrastructure and facilities has given rise to sport professionals, and its consumer oriented equipment. Participation and entertainment values have shown enough potential for sport to be a possible avenue for a lifetime career. There is no doubt that the performer or player holds the centre stage but managers, coaches, administration personnel, analysers and the like also play key roles. It is in view of this broader dimension of sport that diverse job opportunities are opening day by day.

Categories of Sports Careers

Sports as a profession represents two major areas of career i.e. teaching and non-teaching. Further, for the purpose of similarity of subject-matter to be mastered for career preparation, the careers may be divided into the following categories:

1. Performance
2. Teaching, coaching and training
3. Administration
4. Fitness, rehabilitation and therapy
5. Sales and business management
6. Communications

1. *The Performance Career*

The active sports person, of course, holds number one position in sports world. The world of sport, so exciting and glamorous, would cramp within 24 hours without starry attraction of players, competitors and supporting cast. They win, they lose and they provide the excitement around while all other activities are simply a backdrop. On the contrary, the dream of many sportspersons is to be professional performers but few succeed in earning a living as professional athletes. Even though television, commercial support and job opportunities are expanding, yet it is estimated that less than even one per cent succeed in playing as professionals.

Unfortunately, the average professional career in sports performance is much shorter than is generally realised. Secondly, they spend a great deal of time and effort on physical conditioning and psychomotor development because their skills are on constant display . It is realistic to view performance career of sports persons as a temporary one.

However, professional performance career span can be best utilised by preparing for a more permanent career that may range from officiating, coaching to communications and sales.

Despite the public stereotype, sports officials are intelligent, well trained and competent persons with an encyclopedic knowledge of their sport. They are often called upon to handle a couple of charged-up teams and never have to resort to the rule book, they really are priceless asset to the profession. Opportunities for work are normally part-time, for variety of sports as well as for various age-groups. However, preparation of officials requires less schooling and more of an apprenticeship type work. This preparation is normally completed by taking written and/or practical examination, given by the state and national sport organisations. Officiating, whether done as a full-time or part-time job is an excellent source of extra income and job satisfaction. It is also an excellent means to understand the game, which, in turn, is of greatest help in adopting other sports careers successfully.

2. *Teaching and Coaching*

The teaching-coaching aspect of sport is a broad one and ranges from school level (formal level) sports to such refinements as individual tutoring in sports like tennis, athletics or gymnastics and swimming (professional level). There is no limit as to how long one can coach and teach provided one is fit to instruct. However, it is ideal to start early because there lies ahead a long road of important jobs where experience counts heavily. In teaching job, most people can live well and comfortably, and if a person has an aptitude to enjoy the work, teaching can be a most rewarding and satisfying career. Good teachers and coaches are always valued.

However, the average category teachers and coaches can also do well in the profession because of the ever increasing need, provided they do not limit their job search to a particular locale and are flexible to move wherever the opportunities arise.

A great advantage in teaching is about ten weeks' summer vacations and liberal vacation time throughout the academic year. Teaching and coaching jobs in specific demand full attention, but unlike other jobs, the working time is distributed relatively in short spells during the day. Such arrangement of working time gives many people the opportunities to attend to other academic pursuits, supplement their income, or do 'their own things'. It also allows for rejuvenation, giving time to prepare for next session which is, however, important in teaching-learning process. Success in teaching and coaching careers is further dependent on 'the continuous process' of reading, comprehending and preparing to implement the latest of techniques, tactics, strategies, psychology and method etc.

3. *Administrative Careers*

Administrative careers in sport usually follow successful tenures in teaching, coaching and management of sport. Experience, no doubt, may be the key to future in administrative careers, but other factors are also important. Among them, leadership qualities are the most important. An administrator in sport is to be a person of integrity, well organised, fair in dealings with others, as well as willing to accept responsibility and its consequences. While administrative positions in teaching and non-teaching areas appear to be lucrative both in salary and prestige, they also have their headaches. They may be confining, requiring long hours, with pressures from various aspects of work itself. Truly speaking, administrative jobs are not for every one, but if one finds the nature of job attractive and rewarding, it may prove to be a bright future.

An administrator in sport can have such designations as Owner, General Manager, Sports Director, Executive Director and so on. The duties are the same, however — to assume overall responsibility for the entire sports programmes. The main areas of operation are finance, personnel, and goals/objectives.

4. *Fitness, Rehabilitation and Therapy*

Health as a related concept of sport has been accepted traditionally because of its supposed health benefits. Recently, the interest in health, fitness, particularly the adult fitness, has gained momentum. As a consequence the demand for specialists in health related careers has increased. Major career categories in health are identified as fitness, sports medicines, rehabilitation and adapted physical education. Each category, though health oriented, has specific duties, minimum qualification requirement and job outlook.

Fitness. Physical education teachers and coaches are assumed to be exercise specialists, at least by their students. To the adult public, however, the fitness specialist is someone who, through education and personality, motivates them to participate in exercise. The Fitness leader not only can explore job opportunities in health clubs, parks, games clubs, hospitals, etc, but also needs to muster efforts to organising and supervising exercise sports programmes. Presently, there is a trend to employ trained physical educators as fitness leaders. But it is believed that as the public becomes more conscious of the need for intelligently supervised and organised adult physical fitness programmes, career opportunities will increasedly open. However, salary and fringe benefits depend solely on the financial condition of the enterprise, although they are generally low as compared to other teaching jobs.

An exercise physiologist is a fitness specialist, who supervises and directs the overall fitness programmes in various organisations. A slow but steady growth of employment opportunities is realised in hospitals, private clinics, university departments etc. Depending upon the degree of competence, the exercise physiologists will soon earn acceptance by physicians too.

Sports Medicine. Although a fitness specialist may be considered as part of sport medicine team, the term usually refers to the services of a physician or athletic trainer. In India, interest in sport medicine has already been generated. Sports organisations have started to devote a major chunk of their services to the treatment of sports injuries both preventive and rehabilitative.

Physicians who specialise in sports medicine, devote their medical practice mainly to diagnose and treat persons having problems due to vigorous physical activities. They, however, need to realise the importance of precise treatment for fast recovery and earliest rejoining of the game. So far, physical educationists have not adopted medicine as a profession, thus the physicians are invariably regarded as essential members of physical education or sport stream.

Athletic trainer is a person qualified by training and experience to supervise the preventive and rehabilitative aspects of athletes. The demand for athletic trainers appears to be there in view of increased emphasis being laid on competitive sport.

Therapy. Therapy includes mainly five functions i.e. corrective, physical, dance, therapeutic recreation and cardiac rehabilitation. Specialists are expected to ensure minimum standards for establishing their respective professional groups.

A corrective therapist assists individuals in overcoming physical or mental disabilities through medically oriented physical education techniques.

A physical therapist or physiotherapist works with patients who have been disabled by illness or accident or by birth. Treatment by physical therapist includes exercises for strength, agility, co-ordination, motion and endurance. Usually these therapists work as (a) professionally qualified physical therapists, (b) physical therapy assistants, and (c) aides. The demand for physical therapists will be greater in times to come.

A dance therapist uses dance (rhythmic movement) as a psychotherapeutic aid to physical and emotional expressions. Communicating through dance has proved to be helpful in alleviating social, emotional and physical problems. The need to have dance therapists in rehabilitation centres, psychiatric centres and hospitals, correctional facilities and mental retardation and development centres, has been realised and surely will grow as the medical and psychiatric professionals discover their effectiveness.

A therapeutic therapist takes care of people such as emotionally and physically handicapped, the disadvantaged and the elderly for a behaviour change and promotion of individual growth and development.

A cardiac rehabilitation specialist is a therapist who closely supervises the physical reconditioning efforts of persons who have survived a heart attack or have suffered from other heart problems. Career prospects are undoubtedly bright for these therapists.

The scope of adapted physical education is very broad, because it serves a variety of population. It focuses on persons with vision, hearing and other social problems, making them aware of educational skills. The adapted programmes are designed to emphasise basic coordination, revising rules of regular games, fitness activities, and rehabilitation exercises.

5. *Sales and Business Management*

Sales persons are expected to be knowledgeable about their product or service. They are equipped with ability to convince the buyer that the price asked is fair and they make every effort to satisfy the customer. Sales persons in sports sell various types of goods ranging from sporting goods to gears and accessories; equipment — technical to scientific. They sell goods to general public, teams, groups and institutes etc. A 'sales personality' (the ability to interact with customers and to convince them that the product is suitable to their need) is the basic qualification for becoming a successful sales person. Knowledge of the product is obviously of importance, hence it is usually better to begin a sales career as a generalist than becoming a specialist. Thus, a broad background of physical activities and sport is most desirable. In view of the societal reasons affecting the sport consciousness, there is every reason to believe that business in sport and recreational goods will increase and so also the opportunities for sports sales persons. Initially sales persons are either paid daily or monthly, but after gaining experience, they start getting commission plus salary. They also have an area to work as sales representatives whereby they call upon buyers for firms and stores, recreation departments, sports directors, coaches or owners of sport facilities/clubs. They display the samples, take orders and make deliveries at a later time. As sales representative, one must be capable of demonstrating new products, make suggestions on advertising and displays, handle complaints about defective goods etc. Such a job requires a lot of travelling, so also physical vigour.

The owner/manager oversees all the aspects of the unit operation i.e. personnel, advertising, sales, expenses, inventory control, facility upkeep etc. Familiarity with the products, their manufacturing/procurement, sales and service needs to be developed for a successful management. Such jobs require long hours in service, as the nature of job involves high responsibility and constant alertness to all events of the organisations. However, in return, one may enjoy above average financial gains and profits.

6. *Sports Communication*

Sport communication includes the print and broadcast media, plus public relations and sports promotion. It is a growing field of professionals who write, edit, design, manage, sell and distribute sports sections of newspapers, magazines and books. In broadcasting they are people before the cameras and microphones, and also behind the scene who are rarely seen or heard. These people bridge the communication gap between sports and the public. Because of the variety of means and methods of communication and demands of the society, a wide range of career opportunities are available in sports communication.

Sports writers are found most often on the staff of newspapers, as virtually every such publication has a separate section devoted to sports. Newspaper jobs are relatively less paid than other communication careers, but there is a compensatory feeling of independence. Traditionally, such jobs are jumping-off points for other better sports careers. In sports writing too editing has its own role to play. Writing and editing have their own rewards. Often people with an aptitude for constant exposures, daily challenges and interaction with new faces are preferred for reporting jobs. Sport writers may be free-lancers or employed by a particular periodical. In the latter case, writers are more apt to cover a variety of sport. Salaries are moderate to high depending upon the reputation and popularity with readers.

Publishing in sports also looks forward to professionals willing to undertake overall responsibility of publication units including the quality, content, sales and promotion of books, journals and periodicals, etc.

Although the opportunities are very limited, people can specialize in sports photography, painting or illustrations. There may not be large number of jobs available, but persons with artistic ability can develop a part-time/full-time career in sports. An awareness of interesting happenings around is paramount. Agility also helps, since sometimes one has to go out of the way to catch an action in haste.

Broadcasters, TV or radio, are very much in evidence. From faceless names in the studios to celebrity status of personalities, these persons are heard on every radio station and seen on all TV sport channels. Television's block of time for sports is fairly high all over the world. Provision of Cable and Star TV has promoted higher viewership of sport.

Besides the desirable educational preparation and audition tests of radio and TV, it is essential to have 'on the air' experience.

A sport information director, quite often known as public relations officer, obtains media coverage for all operations, issues publicity releases backing up with pictures. He also arranges for 'curtain-raisers' and interviews with players and coaches etc for providing first hand information. Usually, P.R.O. looks after the promotion aspects of organisations and sport by arranging speeches, showing films, advertising and distributing publicity material. In contrast to routine working of other commercial publicity jobs, sport publicity information is an exciting challenge. It is infact a round the year job and with enough work to keep busy even during off-seasons.

Sport statisticians are still another type of professionals needed for maintaining records and statistics for its developed need in communicating sport. Statistician in sport customarily is expected to work for the purpose of sport publicity. They work on the score sheets of the official scores at the events with speed and accuracy as a prime factor. They rely heavily on computers in today's world of sport, being ready with data files ready to be distributed to all interested, especially the press-box. Usually these records are prepared on the basis of individual/team performance, season of the game, per game and patterns of play etc. These statistics are made available in book form to be used as record reference for years to come. Statisticians are expected to provide uptodate figures on the spot during game contest to be announced by announcer, alongside flashing it on TV or score-screens in the playfield.

Sports Careers: A Choice and Commitment

To conclude, it is obvious that sport as a profession means tough work, long hours and disappointments. The work is not always bright with glamour and cheers and big crowds. A lot of continued effort, long years of professional preparation, risks and doubts are as normal part of sports career as that of any other profession. People working behind the scene of grand successful shows of sport often do not even see the glimpses of games or its superstars. The work often goes on late evenings and on holidays when others normally rest and relax. In nutshell, sports professionals work when others play and relax.

But, in sports careers, one remains in the thick of things. Time never shows when one is working in sports. There is practically not much time for the average aches and pains. The scenes, seasons and people change quickly, bringing in fresh momentum every time. Few retire in sports. It is life full of challenges, fun, adventure and a sense of accomplishment to revolve around.

So, no matter if one might not wind up making millions, but the laughs, friendships, continuity of process along the way is what is worth getting into a commitment towards a career of choice in sports.

Thinking and Decision Making

D.N. Sansanwal*
S. Saxena**

Human beings take decisions in normal as well as problematic situations. Some people take fast and accurate decisions. It might be because decision making process is a function of information, thinking and reasoning. In our schools different subjects are taught to develop thinking and reasoning. The common experience is that students lack in thinking and reasoning abilities whereas they may be good at subject matter or information. There may be various reasons for such a state of affairs. One important reason may be that during teaching as well as examinations, the knowledge of subject matter or information is given importance over thinking and reasoning. This deficiency can be overcome by scheduling a period on the time-table wherein thinking and reasoning are taught.

Six Thinking Caps

There are different procedures, ways, methods and strategies of developing thinking and reasoning. In this paper, one of the procedures of developing thinking is described. The method is named as six thinking caps.

The purpose of six thinking caps is to unscramble thinking so that a thinker is able to use one thinking mode at a time — instead of trying to do everything at once — in color printing, each color is printed separately and in the end they all come together.

Further, this method is designed to switch thinking away from the normal argument style to a map making style. This makes thinking a two stage process. The first stage is to make the map. The second stage is to choose a route on the map. If the map is good enough, the best route will become obvious.

Caution: The six thinking caps do not cover every possible aspect of thinking, but they do cover the main modes. They provide a formality and a convenience for requesting a certain type of thinking either of oneself or of others. In the beginning people might feel a little awkward about using the different caps, but this awkwardness soon passes as the convenience of the system becomes apparent.

The six colours are white, red, black, yellow, green and blue. In nutshell their descriptions are as follows:

White Cap Thinking

As we all know that on reading books we get only information. The book itself does not offer interpretations or opinions except whatever is written by the author.

During decision making process, information is required. For this one should use focusing questions.

In practice there is a two-tier system of information. The first tier contains checked and proven facts. The second tier contains facts that are believed to be true but have not been fully checked. Further, there is a spectrum of "likelihood" ranging from always true to never true. In between there are usable levels such as "by and large", "sometimes", and "occasional". Information of this type can be put under the white cap, provided the appropriate "frame" is used to indicate the likelihood.

White cap thinking is a discipline and a direction. The thinker tries to be more neutral and more objective in the presentation of information.

During the course of exercise, one can be asked to put on the white thinking cap or one can ask someone to put it on. One can also choose to put it on, or to take it off.

The white (absence of color) indicates neutrality.

Red Cap Thinking

During the process of decision making, one may become emotional. The red cap legitimizes emotions and feelings as an important part of thinking. Thus it allows the thinker to say. "This is how I feel about the matter". Further, it provides a convenient method for a thinker to switch in and out of the "feeling" mode in a way that is not possible without such a device.

The red cap allows a thinker to explore the feelings of others by asking for a "Red Cap View".

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The red cap covers two road types of feeling. Firstly, there are the ordinary emotions as we all know them ranging from the strong emotions such as fear and dislike to the more subtle ones such as suspicion. Secondly, there are the complex judgments that go into such types of "feeling" as hunch, intuition, sense, taste, aesthetic feeling and other non-visible-justified types of feeling. Where an opinion has a large measure of this type of feeling it can also fit under red cap.

Caution: When a thinker is using the red cap there should never be any attempt to justify the feelings or to provide a logical basis for them.

Black Cap Thinking

Each decision involves risk. Of course, the degree may vary. Thus, it is necessary to think about the risks involved in any situation. The black cap thinking is specifically concerned with negative assessment. The black cap thinker points out

- What is wrong, incorrect or in error.
- How something does not fit in experience or accepted knowledge.
- Why something will not work.
- Risks and dangers.
- Faults in a design.
- The error in the thinking procedure and method itself.

Caution: The black cap thinking is not argument and should never be seen as such. It is an objective attempt to put the negative aspect. It should not be used to cover negative indulgence or negative feelings which should make use of the red cap.

Yellow Cap Thinking

It is not true that one thinks negatively during decision making process. In other words, one also thinks positively. The constructive thinking is required during decision making process.

Yellow cap thinking is positive and constructive. The yellow colour symbolizes sunshine, brightness and optimism.

Yellow cap thinking is concerned with positive assessment. It covers a positive spectrum that ranges from the logical and practical at one end to the dreams, visions, and hopes at the other.

Yellow cap thinking probes and explores for value and benefit. It then strives to find logical support for this value and benefit.

Yellow cap thinking is constructive and generative. It is from yellow cap that come concrete proposals and suggestions. It is concerned with operancy and with making things happen. Effectiveness is the aim of yellow cap constructive thinking.

Caution: Yellow cap thinking is not concerned with mere positive euphoria (red cap) nor directly with creating new ideas (green cap).

Green Cap Thinking

Creative thought can enhance the quality of decision making process. For thinking creatively one has to wear green cap deliberately. The green colour symbolizes fertility, growth and the value of seeds.

The search for alternatives is a fundamental aspect of green cap thinking. There is a need to go beyond the known, the obvious and satisfactory.

With the creative pause the green cap thinker pauses at any point to consider whether there might be alternative ideas at that point. There need to be reason for this pause.

In green cap thinking the idiom of movement replaces that of judgment. The thinker seeks to move forward from an idea in order to reach a new idea. Thus, it improves the decision.

Blue Cap Thinking

When to wear a particular colour cap? When to change the mode of thinking? Is there a particular sequence in which one should wear the caps one after the other? How long a particular colour cap is to be put on? All this is controlled by a person who wears the Blue Cap.

The blue cap is the "Control" cap. The blue cap thinker organizes the thinking itself. It is "thinking about the thinking needed to explore the subject."

The blue cap thinker

- is like the conductor of the orchestra.
- calls for the use of the other caps.
- defines the subjects towards which the thinking is to be directed.
- sets the focus.
- defines the problem and shapes the questions.
- determines the thinking tasks that are to be carried through.
- is responsible for summaries, overviews and conclusions. These can take place from time to time in the course of thinking, and also at the end.
- monitors the thinking and ensures that the rules of the game are observed.
- enforces the discipline.
- stops argument and insists on the type of thinking.

Caution : Even when the specific blue cap thinking role is assigned to one person, it is still open to anyone to offer blue cap comments and suggestions.

Distance Education — the Panacea for all Problems

Hon'ble P V Narasimha Rao, Prime Minister of India, inaugurated the new campus of Dr. B.R Ambedkar Open University built at a cost of Rs 5 crore on a 53.6 acre elevated spot in the Jubilee Hills, Hyderabad. In a wide ranging address delivered on the occasion, Mr Narasimha Rao presented his testament of Distance Education. We are pleased to carry the full text of the Prime Minister's address for the benefit of our readers.

Distance Education has been one of the most difficult subjects which we have undertaken, most intricate of tasks that we have started in this country. I am not sure whether the credentials of distance education have been finally and definitively established even now because I know for certain that there are some people, some educationists who think that this is a pipe dream and this cannot really compare with education proper.

It was also said when we were debating on the question of distance education, that this distance education and the open university system are cheaper alternatives because we do not have money. We do not go in for buildings everywhere. We cannot have colleges functioning everywhere like regular colleges. Therefore, it was said that the open university system be started. I tried to go into this as the Person-in-Charge of education for a long time and I find that all these are based on policy.

Distance Education is not the cheap kind of education that it is said to be. It is education which is even more sophisticated, more difficult to achieve than ordinary regular kind of education, orthodox kind of education. I found that the large number of students who are spread all over the state or the country as the case may be, find it sometimes baffling how they can cope with this learning that is being imparted from a distance through several media, through several gadgets and whether it is possible for them to understand the subjects as thoroughly as it is possible in regular education. We have found, however, after going into the experience of some other countries like Thailand, like England, like Canada, that this is as good and effective an education as any, if not better, and therefore the credentials I think have now been established after a few years.

It is good that Andhra Pradesh which has had the distinction of starting many schemes first in the country has also started this. It was as uncertain as it was started then, as it was anywhere, in any other state, where it was started.

For instance, we started the Junior Colleges. We found that the experiment of junior colleges has its pluses and minuses. But we were the first to start it anyway.

So, I think the experience of this University is going to be very valuable in the organisation of other universities or other institutions of like nature with the same objectives, and I am sure in that way you can call this institution a pioneering institution. Pioneering is not always the most successful, because it is they, the pioneers, who come across all the difficulties, first, they are pioneers in the sense that they start an institution and also face all the first failures and first difficulties of the institution, hurdles of the institution. They find ways which others copy or take over from them, and therefore to be the second or third or fourth university is always easier than to be the first. From that point of view, I am sure that this University has something to offer by way of advice, by way of guidance, by way of sharing of its own experience with other universities or intending institutions. I would like to stress the point for the first time. I understand that evidently you would'nt have gone constructing it unless you wanted it or you needed it. But I was thinking that it is not the building, but what happens in the building, what goes on in the building, in the precincts of the building, in the rooms of the building, that is more important.

I have no way of checking the quality of your products but I hope that someone is checking, someone is doing this checking and keeping track of the quality of these products. Please do not allow the open university system, the distance education system, to languish behind and get a bad name for the system itself.

I have a feeling that there is much more to do than has been done in this field. I have been thinking about the distance education as system, as not only a system to reach everybody but to reach everybody equally effectively, equally with the same effect and with the same amount of knowledge being imparted. So I would like to know if there is anyone doing research in distance education as such. When we started the Central Open University, Prof. Ram Reddy was there. He told us that in the first year he wanted the people and the students to know what is distance education more than what is imparted through distance education. He wanted the students to know what exactly are they receiving, what exactly they are doing, what exactly they are being made to do. So the distance education itself was one of the subjects which he had chosen. I was the Minister concerned at that time and it is good that what is being imparted is also coupled with what is the imparting procedure of the system itself and how does it get imparted to the students. This is something which is quite encouraging and I would like to congratulate those who have been doing this work. But as I have said I would not be satisfied with the effectiveness of the open university system or the distance education system before I am told that the products of this university have competed well, have been found to be even superior to the products of the other universities and whatever snobbery one comes across, whatever highbrow snobbery one comes across among educationists is a myth and this has been exploded.

I would like to know from you, from Prof. Ram Reddy and others, Bashiruddin Saheb and the others who have been working on this system, to tell me that they have found it, the world has found it, the employees have found it, the examiners have found it to be equally effective.

It is not every professor that can run an open university system. It is not every teacher that can teach in the open university system. They also have to have special skills. The use of electronic media, the use of different gadgets, the use of other methods which have certain limitations as a method but combined with the other methods make the whole system work, make the whole system more effective, that is the kind of integration of the methods that is much more important than any one method itself. Therefore, this also is one of the research fields, a field in which you have to go on committing mistakes if you will, but perfect the method as far as possible, as you go along. So this I think has to be borne in mind.

I have great admiration for those who are pioneers in this field because once it is established, it is going to solve many problems of education in this country. We have problems at the primary level, we have the problems at the secondary level, we have the problems at the tertiary level — all levels bristle with problems. At the primary level, we all know the dropout difficulty and how we have to make up by adult education after having allowed the child to become an adult in illiteracy and then we go on correcting it. Then something happens which is successful, something happens which is not successful and therefore the whole system gets a kind of mixed reputation. I have seen many leaders, I have known many leaders who have been colleagues in the central government, my own colleagues who have said that all these methods of adult education etc are simply a waste of money. Now we had to prove to them — I was in the HRD ministry at that time — we had to prove to them by all possible methods and persuasions that this is not so.

And I am not sure whether they or their ilk have been fully convinced. But one has to demonstrate, one has to demonstrate to be able to carry conviction to anyone who doubts the efficacy of the system. The orthodoxy which you find in the field of education is extremely strong, maybe stronger than in any other field. They will never look at you unless you prove to them that you are better than them. That is where the challenge comes. I want the challenge to be accepted by the open university system. It should prove itself, it should prove to the whole world, except a few sceptics, that this is equally effective.

I am happy to be able to commend the foresight of educationists in Andhra Pradesh as well as the state government here who set up the Dr. B.R. Ambedkar Open University as far back as in 1982. But the preparation had been done, the studies had been made before 1982. Infact, the studies about the open university, the open university as a system, the curiosity about the system, the desire to learn about the system, to examine it, to get into details on all this was done in Andhra Pradesh even before 1982. 1982 was a big culmination of all this effort, the culmination of trials and tribulations and because it was the first university it has a first to its credit but to the credit of Andhra Pradesh goes the entire hard work that went into the making of an open university. So I remember those days; I feel that some hard work which was put in has been rewarded properly. I wish the students of this university, not in Hyderabad alone, but in the entire State of Andhra Pradesh, maybe in villages, maybe in municipalities, maybe in districts, wherever they are, all success that is due to them, that they deserve the success that is due to a system which has just been accepted but at the same time which has not gone into stagnation.

This is one of the wonderful things about the open university that it will never go into stagnation. Its variety, its quest for knowledge, its quest for better methods, will always remain alive and only if that happens, only if that lively interest in the system itself is kept up will the system succeed. I would like to give this as a bit of advice to those who are in charge of the universities not to get contented, not to become content with anything that you have already done. The kind of quest that you should pursue all the time is something which really becomes a high watermark of your excellence and that is the real secret of an institution of excellence. I hope this is being done.

But I have no way of finding out. If someone can tell me after a comparative study of the systems that this system has come to stay because it has proved its worth more than what any system could be expected to prove, then I would be satisfied. Until then I will admire your buildings, I will admire what you have been doing, the effort that you are putting, but I will not be able to be satisfied that whatever you have been doing here is worth doing and will remain an effort at excellence which every educational institution should be.

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The Currency of Power

Prof U R Rao, Former Chairman, Space Commission and Secretary, Department of Space, Govt. of India delivered the Convocation Address at the 32nd convocation of the Indian Institute of Technology, Bombay. He said, "Science and technology have become the most powerful currency of power for continued exploitation and domination of the developing world. We have to implicitly recognise that science and technology is the principal means of producing new wealth and any country which ignores the development of science and technology, on a self-reliant basis, will inevitably perish in the modern world. Concurrently we have also to understand that there is no short cut to the development of science and technology and if we are afraid of a few minor setbacks in the process, we will never be able to take a step forward, let alone walk along with other developed nations with our head held high." Excerpts

It is often said that the greatest gift of God to humanity, next to life itself, is technology. Even though the human species came into existence 3.5 million years ago practically all the remarkable modern scientific and technological developments, such as locomotives, electricity, quantum mechanics, nuclear technology, biotechnology, radio communication, computers and space technology are a product of the scientific efforts of this century. Beginning with the discovery of stone implements and combined use of fire by the stone age man, every major technological advancement such as the use of metals and domesticated animals, the industrial revolution, nuclear era and the onset of space age have had a profound and significant impact on the material as well as cultural growth of human society.

Your generation, who are the product of space age, have already witnessed the extraordinary scientific achievements which have enabled the scientists to reach the very end of the universe and trace our heritage to the very beginning of time. The remarkable developments in space exploration in the last four decades, have revealed for the first time, the magnificent panorama of hitherto totally hidden aspects of the cosmos filled with exotic celestial objects such as pulsars, quasars, neutron stars and black holes, where gravity rules the entire matter and space and time have lost their basic identity. Even more spectacular is the application of the vast and unlimited potential benefits of space technology which already extend over communication, TV broadcast, education, meteorology, disaster mitigation, agricultural growth, optimal management of land, water and ocean resources, environmental protection, flood and drought management, sustainable integrated development, health and entertainment, virtually touching every facet of human endeavour.

Mind boggling as the discoveries in the last few decades are, the real benefit of science and technology still eludes a large part of the peoples in the developing world, sustaining 80% of world population on less than 20% of the global resources. As Smt. Indira Gandhi stated in the UNISPACE 82 Conference on the peaceful uses of outer Space "It is pertinent to ask if such spectacular advances, which in some way have brought the world together have also contributed to reducing the glaring disparities which divide people, the rich and the poor, the haves and the have nots. The promise of gains from advanced technologies elude the majority of the peoples, whose aspirations for a better and richer life remain unfulfilled".

Developing countries, which occupy less than 55% of the geographical area of the world but carry over 80% of the world population, suffering from serious shortage of resources and capital, lack of trained manpower, large scale illiteracy, low agricultural productivity, industrial backwardness and rapidly growing population, are facing a very grim future, which can only be averted by the use of appropriate technology. If not only the quantitative transformation of a society but its very survival depends on the optimal utilisation of science and technology, the challenge before all of us is to imbibe the scientific spirit and steadfastly work towards assimilation of technology into the cultural fabric of our society. The rapid rate at which obsolescence sets in demands constant physical and intellectual adjustments from the society at large, if we are to prevent the thermodynamics of the social structure from degenerating into an impotent mass of potage. Unless we are willing to take quantum jumps in technology based on sound economic and scientific evaluation, we will fail in our attempt to reverse the prevalent state of scarcity and social structures of inequity in a large part of the world.

Problems of Developing Countries

In spite of the food production in developing countries increasing at an average rate of about 3% per year over the last two decades, the steadily increasing population in these countries and year to year variation in the production of foodgrains have already resulted in over 65 countries facing serious food deficit and acute famine conditions. Asia-Pacific region alone accounts for a staggering 65% of world's extremely poor population. Even more alarming is the fact that foodgrain production in the world as a whole has reached an apparent plateau and has practically remained stagnant since 1987, while population has been steadily increasing. In spite of the green revolution in India which enabled the country to increase its food production from 55 mt in 1947 to 177 mt last year, the average agricultural yield in India is just about 1.7 t/ha as against the world average of 2.6 t/ha and over 4.5 t/ha in developed nations. Furthermore, large scale irrigation which contributed to the increased agricultural productivity in the past has itself turned most of our fertile land saline, unproductive and severely degraded due to extensive use of chemical fertilizers, inadequate drainage and bad agricultural practices. The large pressure of growing population resulting in extensive deforestation, severe overgrazing and increasing urbanisation together with total mismanagement of top soil and water resources have further compounded the problems. Super imposed on these is the real prospect of global warming scenario due to the unprecedented anthropogenic intervention through indiscriminate industrial activity resulting in the increase of carbon dioxide, methane and CFC's which are threatening to upset the delicate greenhouse equilibrium and which could lead to irreversible climatic changes.

The world thus faces a severe paradox on a global scale. While use of traditional green revolution technologies involving chemical fertilizers, irrigation techniques and pesticides have caused negative ecological repercussions, continued rapid growth of agricultural and aquatic productivity is vital to avoid major catastrophe of large scale starvation. The solution obviously lies in the adoption of optimal strategies to achieve sustainable integrated development by combining the vast amount of resource information derived from space inputs with conventional socio-economic profiles which alone can initiate a new green revolution, essential to ensure food security to the growing population of the country. Problems of unemployment and population explosion will have to be tackled through rapid rural development, improved communication infrastructure and industrialisation. Growing energy requirements have to be met with adequate investments in the energy sector. Distance education methods need to be adopted on a nationwide scale to eradicate the prevalent large scale illiteracy in the rural sector and to provide continuing education to the shop floor workers. Development and implementation of environment friendly technologies must become a part of industrialisation strategy to ensure a reasonably safe life for the future generations. While all these tasks are well within our technological reach, accomplishment of these requires total involvement of highly skilled and fully committed scientists and technologists, massive education at the grass root levels and wide spread dissemination of scientific culture — in other words, the "greening" of the human mind in our country.

Achievement of technological excellence is possible only when we realise we cannot achieve progress if we continue to ignore the development of our own most valuable human resource, do not create a conducive atmosphere where talent, ingenuity and original thinking can flourish and deny gainful employment to our talented citizens. If only our socio-political system recognises that right to education and right to employment are the two most fundamental rights which must be guaranteed to every citizen, we can surely avoid the ugly spectre of scientific brain drain, under employment and unemployment of a vast number of scientific and technological talent and the prevailing sense of insecurity even amongst the highly educated citizens of our country. We have to understand the need of the hour is to raise the standard of the lowest common denominator and not dilute the level of excellence in the name of social justice, if we are to prevent the degeneration of our future society.

Need for Technological Self Reliance

Achievement of self-reliance is the basic foundation stone on which societies can create and intelligently develop new technologies. It is unfortunate that even highly placed persons have often questioned the need for developing high technology, without understanding its implications. If low technologies are needed for digging borewells, for carrying out day to day activities and for production of cheap consumer goods, sophisticated technologies are essential for large scale irrigation, optimal management of land and water resources, large scale production of efficient energy systems, development of defence strategies and establishment of nationwide communication system. The hallmark of highly sophisticated technologies is their multi disciplinary nature, cutting across the narrow boundaries of different disciplines and requiring the establishment of industries which can deal with complex systems. Infact, we may find that in many cases, use of sophisticated technology may be the most cost effective method of achieving progress in the shortest possible time by allowing us to leap frog and take a quantum jump instead of moving along the step by step process.

It has become a fashion to talk of a new science policy every now and then, which I consider as an irrelevant diversion to cover up our inadequacies in its implementation. While the emphasis on the type of technologies to be promoted could change based on their relevance to the society at a given time, the policy of utilising science and technology for the development of any nation can never be in doubt. Our own scientific policy was beautifully enunciated by Pandit Nehru, in the 1958 resolution "It is the inherent obligation of a developing country like India, with its tradition of scholarship and original thinking and its great cultural heritage to participate fully in the march of science, which is probably mankind's greatest enterprise today". What has gone wrong is the implementation of the policy by the socio-political system which is devoid of scientific temper and an appreciation of science, which still considers science and technology as an embroidery and not the main social fabric and which has failed to actively promote science and technology in a focused and purposeful manner. Instead of concentrating on a few selected areas of relevance and reaching for excellence, we have allowed second rate research in every conceivable field of scientific activity, most of which at sub-critical level. Scarce resources are dissipated through proliferation of institutions without any accountability, sacrificing quality for quantity. Scientific temper, which is rightly defined as "the temper of a free man", is replaced by whimsical attitudes, frivolous debates, temperamental support, lack of conviction and insincere implementation.

Technological self-reliance cannot be achieved by merely shouting loud slogans, initiation of yojanas and schemes only for political expediency and frittering away of meagre funds by a wasteful society which over indulges in religious customs, puts up large monuments to the dead instead of taking care of the empty stomach of the living. The socio-political system which has divided our country using every means and has allowed rampant corruption, nepotism, unrest, intolerance, selfishness and violence to take firm root has brought the nation to a grinding halt. The bureaucratic monopoly, a legacy left by the British, has taken such firm roots that the country has failed to recognise the need to have a new breed of professional diplomats who combine political, economic and technological wisdom and not superficial generalists.

Even in the face of these adversities, there can be no denying that our country has greatly benefited from the substantial progress achieved in selected areas of science and technology, the credit for which goes entirely to the scientists. The spectre of thousands dying of starvation in the sixties has become a thing of the past, in spite of the enormous population increase. Installed electricity generation has gone up from a mere 2.3 million kw to 80 million kw. An increase in the production of crude oil from 0.5 mt. to over 32 mt., coal from 30 mt. to over 240 mt., steel from 1 mt. to 10 mt., a ten fold increase in metal products and an eight fold increase in industrial goods are a result of scientific input to the mainstream activities of the nation. Our total export has increased from 6 billion rupees to over 400 billion rupees during the last 40 years. But for the establishment of heavy machine industries, sophisticated tool-making capabilities, chemical industries and electronic enterprises, the country would still be continuing to import even pins and clips, let alone becoming a significant industrial power. Our space satellites have initiated a total communication revolution in the country by establishing connectivity with even the remotest corners of the country, in addition to providing emergency communications, disaster warning, information networking and rural telegraphy. The remarkable spread of satellite television has opened up the immense possibilities of utilising this powerful audio visual medium for eradication of illiteracy within a reasonable time frame. Meteorological imaging from satellites have enabled us to make a quantum progress in our weather prediction capability. Remote sensing satellites are being extensively used on a nation-wide scale, for monitoring and management of forestry, agriculture, soils, underground and surface water resources, wasteland, minerals, environment, urban expansion, ocean resources, drought and flood disasters to name only a few applications. Notwithstanding, it is an undeniable fact that there is hardly any room for complacence and much more needs to be accomplished to enable the common man in the country to reap the full benefits of technological progress.

Universities and Education

Prevailing educational system in our universities saddled with outdated curricula and rigid compartmentalisation, which is unable to appreciate the interdisciplinary character of nature, can hardly produce motivated students, who can understand the cybernetic relationship embodied in science and technology. Our universities which ought to be "a place of light, of liberty and learning", have degenerated into poor manufacturing outfits for injecting second hand capsuled knowledge and its faithful reproduction in an archaic examination system. We have to realise, to quote Alvin Toffler, "The technology of tomorrow requires not millions of highly lettered men, ready to work in unison at endlessly repeated jobs, not men who take order in unblinking fashion, but men who can make critical judgements, who can weave their way through novel environments, who are quick to spot new relationships in the rapidly changing reality."

The fundamental responsibility of a university which is to encourage creativity and original ideas can only be accomplished with dedicated teachers, who can train the youth to think rationally, reason logically and not be afraid of accepting new ideas. In the words of John Ruskin "Education does not mean teaching people what they do not know. It means teaching them to behave as they do not behave. It is not teaching the youth the shapes of letters and the trick of numbers and leaving them to turn their arithmetic to roguery and their literature to lust. It means, on the contrary, training them into the perfect exercise and kingly continence of their bodies and souls. It is a painful, continual and difficult work to be done by kindness, by watching, by warning, by precept and by praise, but above all by example." Mediocrity in our educational system can only multiply mediocrity and cannot create excellence.

Excellence in institutions of higher learning can only be sustained through highly motivated teachers carrying out top quality research and development. This implies that higher education has to be essentially elitist. While investment in science and technology over the decades has increased from 0.23% of the GNP in 1958 to around 1%, it is still much less than half of what is spent in the developed nations. In absolute terms, the investments we make in R&D are very meagre, less than 3$ per capita as against 300$ in advanced nations. While we claim the third largest stock of scientific force, it must be recognised that the scientific manpower in India is only about 0.3 per thousand as against almost 4 in the most advanced nations. Investment in human resource development, if vital for ensuring the future of the society, cannot become the sole responsibility of the Government. Industries and the society which are the utlimate beneficiaries have to necessarily share the burden of higher education, in their own self interest.

If in spite of the serious lacuna in our educational system the growth of science and technology in a few selected areas has been very impressive and of world standard, it is clear that our younger generation is second to none and through them we can recapture the glory of the country, if we can bring in selectivity, emphasize quality and provide a conducive atmosphere in our universities for the growth of originality. Our universities must be able to produce a generation of innovators not imitators, planners not paper pushers, job creators not job seekers and thinkers but not followers. It is only then our University graduates can confidently echo the statement of the great French philosopher Descartes "*Cogito, ergo sum*" or "I think, therefore I am" and transform our society into a dynamic, living society.

Science & Industry

Real progress can never be achieved without industries

(*Contd on page 20*)

ENROLMENT IN EDUCATIONAL INSTITUTIONS IN INDIA (3)

ENROLMENT BY STAGES (SCHEDULED TRIBES) 1992-93

STATE/U.Ts.	PRIMARY			MIDDLE			SEC./HR. SEC.			HR. EDUCATION*		
	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL
1	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	347167	223940	571107	70335	30954	101289	34361	12845	47206	3286	835	4121
Arunachal Pradesh	50544	36181	86725	11435	6927	18362	8037	3464	11501	1091	232	1323
Assam	320000	260000	580000	90000	70000	160000	58600	39770	98370	6900	2624	9524
Bihar	478031	303674	781705	100775	51836	152611	42700	17818	60518	0	0	0
Goa	85	67	152	19	8	27	17	7	24	13	1	14
Gujarat	515754	366006	881760	131390	73015	204405	74422	42670	117092	17890	10725	28615
Haryana	0	0	0	0	0	0	0	0	0	0	0	0
Himachal Pradesh	16600	12800	29400	7600	4100	11700	1330	550	1880	446	120	566
Jammu & Kashmir	0	0	0	0	0	0	0	0	0	0	0	0
Karnataka	182510	141430	323940	46317	28791	75108	26428	12817	39245	5682	1629	7311
Kerala	21185	19519	40704	8624	8261	16885	3849	3815	7664	178	77	255
Madhya Pradesh	875031	518729	1393760	234112	74845	308957	89957	19422	109379	11626	2126	13752
Maharashtra	565056	432449	997505	150732	86184	236916	212206	96359	308565	10209	3226	13435
Manipur	51230	42590	93820	9802	7786	17588	7248	5329	12577	1574	892	2466
Meghalaya	78613	73320	151933	20792	19194	39986	14666	13071	27737	2691	1969	4660
Mizoram	59698	54212	113910	19792	17836	37628	10217	10131	20348	1014	463	1477
Nagaland	66736	59545	126281	25983	24653	50636	13042	9989	23031	1859	956	2815
Orissa	540000	255000	795000	114000	48000	162000	35206	19735	54941	3678	812	4490
Punjab	0	0	0	0	0	0	0	0	0	9	1	10
Rajasthan	410000	139000	549000	128000	16000	144000	82000	6000	88000	3675	111	3786
Sikkim	8442	7446	15888	2093	1897	3990	1220	939	2159	0	0	0
Tamil Nadu	41727	31702	73429	14139	9408	23547	7156	4340	11496	500	303	803
Tripura	76083	55309	131392	24448	12251	36699	9414	4460	13874	308	122	430
Uttar Pradesh	19084	10647	29731	6152	2206	8358	3548	1378	4926	1253	505	1758
West Bengal	292000	277000	569000	114000	95000	209000	20092	10560	30652	775	284	1059
A & N Islands	1849	1659	3508	844	694	1538	538	515	1053	36	21	57
Chandigarh	6	3	9	1	0	1	86	33	119	87	17	104
D & N Haveli	8523	5208	13731	2113	1079	3192	1113	534	1647	0	0	0
Daman & Diu	955	792	1747	475	356	831	231	127	358	84	23	107
Delhi	369	320	689	256	150	406	251	175	426	421	252	673
Lakshadweep	4665	3912	8577	2064	1472	3536	1006	687	1693	0	0	0
Pondicherry	0	0	0	0	0	0	0	0	0	0	0	0
INDIA	5031943	3332660	8364603	1336293	692903	2029196	758941	337540	1096481	75285	28326	103611

* Excludes enrolment in Ph.D/M.Phil and all professional courses except Engineering (B.E./B.Tech./B.Arch), Medicine (M.B.B.S) and Teacher Training (B.Ed/B.T)

Source : Ministry of Human Resource Development. Annual Report 1993-94.

ENROLMENT RATIO OF STUDENTS BELONGING TO SCHEDULED TRIBES -1992-93

STATE/UNION TERRITORY	CLASSES I-V (6-11 YEARS)			CLASSES VI-VIII (11-14 YEARS)		
	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL
1	2	3	4	5	6	7
Andhra Pradesh	160.89	106.62	134.12	57.46	25.81	41.89
Arunachal Pradesh	130.87	92.68	111.67	53.51	33.06	43.39
Assam	149.98	128.43	139.49	73.44	60.57	67.19
Bihar	103.57	68.09	86.13	39.88	20.92	30.49
Goa	13.58	10.67	12.12	5.10	2.14	3.62
Gujarat	154.21	113.81	134.41	66.27	38.25	52.52
Haryana	.	.	.	.	.	.
Himachal Pradesh	122.20	94.20	108.20	95.28	51.79	73.62
Jammu & Kashmir	.	.	.	.	.	.
Karnataka	136.68	111.18	124.24	60.06	38.71	49.58
Kerala	130 67	124 53	127.66	90.87	89.81	90.35
Madhya Pradesh	93.25	59.40	76.93	44.37	15.13	30.22
Maharashtra	151.18	119.54	135.62	64.68	39.14	52.27
Manipur	149.66	133.78	142.01	53.85	44.09	49.04
Meghalaya	84.16	78.36	81.26	39.33	35.39	37.33
Mizoram	147.07	141.72	144.47	80.16	75.08	77.67
Nagaland	106.50	98.18	102.41	69.35	68.41	68.89
Orissa	130.69	65.22	98.86	48.12	20.98	34.78
Punjab	.	.	.	.	.	.
Rajasthan	107.58	38.53	74.00	62.16	8.25	36.01
Sikkim	114.07	102.87	108.53	51.26	49.26	50.29
Tamil Nadu	131.08	104.39	118.05	75.97	52.75	64.61
Tripura	174.69	130.26	152.72	100.41	52.78	77.17
Uttar Pradesh	97.47	60.16	79.75	56.83	22.70	40.69
West Bengal	134.92	133.08	134.02	93.10	79.25	86.25
A & N Islands	67.39	56.24	61.61	57.94	49.28	53.68
Chandigarh	.	.	.	.	.	.
D & N Haveli	123.55	83.05	104.26	52.85	29.29	41.55
Daman & Diu	.	.	.	.	.	.
Delhi	.	.	.	.	.	.
Lakshadweep	173.74	145.70	159.72	144.13	109.65	127.45
Pondicherry	.	.	.	.	.	.
INDIA	126.71	88.64	108.19	58.54	32.04	45.64

(*Contd. from page 17*)

having a strong organic linkages and dynamic interaction with the universities and technological institutions. Continued dependence on imported technology, adoption of kit culture and the black box approach by our industries and the reluctance of our R&D institutions to work in close cooperation with industries, have resulted in our industries becoming outdated and uncompetitive in the global market. Unless the prevalent kit culture, which has made industries to continuously rely on transfusion from outside for their survival, is replaced by strong R & D input from academic institutions, industries can never become vibrant, dynamic and forward looking. Industrial progress can only be achieved when industry becomes aware of the importance of supporting R&D. A case in example, is Japan, where over half of the total R&D expenditure in that country is met by their industries, which has resulted in a dramatic impact in improving the quality of their products and services. In contrast, most of our national undertakings, being of captive nature and enjoying continued subsidies and protection, have become gigantic shackles on our national economy. While protection and subsidies may be called for in the initial growth period, indefinite continuation of such support only adds to the overheads, ushers in a false sense of complacence, retards development, encourages continued dependence on borrowed technology, kills the very spirit of innovation and becomes a drag on the national economy.

The liberalisation policy now being adopted in India will hopefully change the situation, in the coming years, to make our industries competitive both in terms of quality and price in the market place of global economy without which our country can neither attain the status of a leading industrial power nor can become economically independent. Wherever concerted attempts have been made to forge a dynamic partnership with industries, as in the case of our national space programme, the results have been very encouraging. Today we have not only built a vibrant and dynamic national space industry cutting across small, medium, large, private and public sectors, but are also witnessing the multiplier impact of the diffusion of tasks, skills, technologies and their spin offs into other areas for the greater benefit of the society.

Technological Hegemonism

I am not against selective acquisition of technology, wherever needed, in order to accelerate our own pace of development. What is being objected to is the continuous dependence on external agencies for our technological advancement. While the intentions behind the global resolutions such as the Montreal Protocol or Rio declaration, are noble and are in the interest of human society as a whole, the implementation of such pious declarations is often manipulated by the developed countries to exploit the poorer nations in the name of intellectual rights, overriding the basic human rights. Peace, development and environmental protection all become truly indivisible only when all nations in the world become a part of the mainstream of the so called "global village." In reality, however, science and technology have been monopolized and zealously guarded by a minority of few advanced nations. While we have no choice but to sign treaties such as GATT in order to have reasonable access to the international market, we have to continuously watch against imposition of discriminatory trade practices involving the much abused term of "level playing field", where the level is not only arbitrarily established but also changed depending on the context, by the advanced nations in their own economic self interest.

We are witnessing the replacement of the old colonial domination, with a new technological imperialism — a mindless and ruthless technological hegemonism — adroitly being employed by advanced nations for imposing their influence and control over the developing world. Only lip service is being paid towards creating a new international economic order in which all countries can progress as equal partners by sharing the bounties of science through appropriate instruments of technology transfer. Science and technology have become the most powerful currency of power for continued exploitation and domination of the developing world. We have to implicitly recognise that science and technology is the principal means of producing new wealth and any country which ignores the development of science and technology, on a self-reliant basis, will inevitably perish in the modern world. Concurrently we have also to understand that there is no short cut to the development of science and technology and if we are afraid of a few minor setbacks in the process, we will never be able to take a step forward, let alone walk along with other developed nations with our head held high.

Excerpts from the Report

by

Prof. B Nag

Director
Indian Institute of Technology, Bombay

Academic Programmes

The first batch of ten students was admitted to the M.Phil programme in Humanities and Social Sciences with specialization in Planning Development.

Successful candidates completing the various programmes who are to receive their degree at this convocation number 361 undergraduates and 408 postgraduate students.

During the academic year 1993-94 formal approval of the Visitor for merging the Metallurgical Engineering Department and the Inter-disciplinary Group in Materials Science was obtained. The group, now called "Department of Metallurgical Engineering & Materials Science" has offered a new B.Tech. programme.

The revised undergraduate programmes in Civil Engineering was implemented, as also the curriculum in Aerospace Engineering with the inclusion of Spacecraft Technology.

Major new courses and curriculum changes which are receiving final attention include an M.Tech, Aerospace programme in Flight Control and Guidance for IAF Officers. The Mathematics Department had undertaken a review of its M.Sc. programme with the aim to introduce two distinct programmes — M.Sc. Mathematics and M.Sc. in Applied Statistics and Informatics.

The Institute has also initiated academic activity in Technology Management in preparation for the activities of the School of Management which are expected to begin in July 1995.

In the academic year 1993-94, the Senate approved a scheme of Teaching/Research Assistantship for postgraduate students to be admitted from July 1994. The scheme envisages intensive participation of postgraduate students in departmental activities such as teaching, research, including sponsored research. It is felt that the scheme will provide scope for fuller development of postgraduate students.

The Institute's Educational Technology Cell was active in producing both curriculum based and general video programmes. Twenty-four such programmes were produced and have been kept with the IIT Central Library.

Our Library is now entering into the modern era at an accelerated speed. Bibliographical databases on CD-ROMs, floppies, can now be accessed from the departments on the Local Area Network. Students now have access to the lectures of their teachers by viewing Educational Video Cassettes of the lectures. There are 81 such cassettes available for viewing at present.

The Physics Department has started a student exchange programme with Chalmers University of Technology, Sweden. Under this two of our Engineering Physics students were at Chalmers for 8 weeks and two Swedish students spent 10 weeks at IIT.

Continuing Education Programmes

During the past year, nearly 67 different programmes have been conducted in which 1312 engineers, managers and scientists from industries and R&D organizations have participated.

Each course, in addition to being financially self supporting, is also designed to generate some resources for the Institute.

Recognizing the importance of entrepreneurship, a 22 week training programme for the Management of Small Scale Industries has been conducted by the Mechanical Engineering Department with sponsorship from SIDBI.

Centre of Environmental Science and Engineering (CESE) conducted six training programmes sponsored by Ministry of Environment and Forest (MOEF) for technical and scientific personnel of the Pollution Control Boards in the country under the ongoing World Bank Project on Industrial Pollution Control. CESE also conducted a series of seven in-house workshops on Environmental Management for Industrial Development Bank of India, Bombay.

The Centre for Studies in Resources Engineering organized a four-week training programme sponsored by UNESCO and DST on 'Geographic Information System for Natural Resources Management.'

The Computer Aided Design Centre offered several short term courses for process industries in general. A certificate course on Piping Engineering was organized twice in the year under review.

Research Activities

Sponsored research projects continued to provide the major outlet for the research urges and creative abilities of the faculty and scientists.

Work was commenced on eighty six new projects, involving a sanctioned outlay of Rs. 5.15 crores. Work was continued on hundred and three projects commenced during the previous two years. In addition, fifty projects were successfully completed during the year.

Sponsoring agencies covered a wide spectrum ranging from Government agencies and Ministries to Public and Private Sector agencies, Research Labs & financial institutions.

It is highly satisfying to record that projects span a wide range of science and technology such as — development of devices to alleviate the sufferings of the handicapped, Safety and reliability analysis relating to nuclear power plants, New materials, robotics, Software development, Computer aided design, Factory integration and management systems, etc.

A major project funded by the Department of Science & Technology relates to the establishment of a state-of-the art national facility for photolabelling and peptide sequencing.

Research activities under the aegis of the ISRO-IIT(B) Space Technology Cell, continued to be an important component of the remote sensing based studies in the Centre for Studies in Resources Engineering.

The Computer Science & Engineering Department has developed "A Maintenance Training Simulator" which was installed by Aeronautical Development Agency for its first customer at Pune.

Substantial progress was made on the three Mission Mode projects — Food Process Engineering, Integrated Design and Competitive Manufacture and Natural Hazard Mitigation. Intensive interactions with industries and user agencies resulted in substantive benefits, in the form of formulation and initiation of several joint projects with clearly identified deliverables, in these generic areas.

After the devasting Marathwada earthquake of September 30, 1993, 3 teams from IIT, Bombay visited the affected area to study the effects of earthquake on human habitat. The Government of Maharashtra designated IIT Bombay for vetting the new designs proposed for reconstruction. A number of dwellings have been built based on IIT Bombay's recommendations.

At the Centre for Technology Alternatives for Rural Areas work on a riding type power tiller has been taken up, and a mechanical rice grain-size sample analyser has been designed and built. Various studies on 'Water harvesting and Watershed development' were undertaken.

Consultancy revenues during the year increased significantly to Rs. 2.2 crores through provision of advisory services, developmental projects, and testing and evaluation services to industries and the services sector. A modest beginning was made on foreign consultancy assignments — through five consultancy projects for overseas R&D organizations.

During the year, the developmental work carried out could be translated into significant technology transfer agreements relating to : systems for drawing optical fibres; microcapillaries; a fuel efficiency logger; software package for finite element analysis; ammonia sensor; and technology for electro slag refining.

Industrial Design Centre bagged the second honorable mention at the International Human Machine Interface Design'93 competition, Japan and a Bronze medal in the International Design Competition, Osaka.

The support forthcoming through MHRD schemes for modernisation of laboratories, and intensification of research efforts in thrust areas, was modest with receipt of grants amounting of Rs. 30 lakhs, and Rs. 35 lakhs respectively.

Our Regional Sophisticated Instrumentation Centre saw effective utilization by Universities, R&D establishments, and Industry from all over India. During the year, nearly 9000 samples were analysed. The newly commissioned analytical SEM has attracted tremendous response from users.

Increased research activity

has a positive side benefit for the Institute as it results in upgradation of labs, establishing new facilities and infrastructure. For instance, during the year, the following facilities were commissioned:

- an auto clave and industrial airflow facility
- a gel permeation chromatography unit
- a FTIR facility
- a set-up for modal studies on optical fibres
- a mutlimedia studio
- a liquid helium manufacturing unit
- a non-linear optics lab
- PROCOM-II for satellite image interpretation
- 77-300 K variable temperature microwave measurement setup
- new labs in electronic materials and polymer composites.

The Computer Centre developed software in thrust areas such as multimedia communications, real time operating systems, computer supported cooperative work, electronic mail etc.

Student Activities

A massive drive was undertaken by Student Gymkhana with the help of NSS and NCC volunteers to collect food grains and clothes for the relief of earthquake victims in Maharashtra. The collected material was despatched through the Indian Red Cross Society to the Relief centres.

In the Inter-IIT Aquatic Meet held in October in IIT Kanpur and Inter-IIT Sports Meet at IIT Bombay, IIT Bombay won the overall general championship. They also won the Gold Medals in Swimming, athletics, volleyball, badminton, and table tennis.

Indira Gandhi National Open University

Schedule of Telecast for the period 1 October to 31 October, 1994
6.30 a.m. to 7.00 a.m.

Date/Day	Academic Programme	Title
3.10.94 Monday	Bachelor's Degree Programme	Squashing and Smearing Techniques Pt. I
5.10.94 Wednesday	Rural Development	Swayam Swaichhik Prayas
7.10.94 Friday	Management	Institutional Infrastructure for Export Promotion
10.10.94 Monday	Bachelor's Degree Programme	Squashing and Smearing Techniques Pt. II
12.10.94 Wednesday	Library and Info. Science	Dewey Decimal Class. VII
14.10.94 Friday	Management	Computers in Development
17.10.94 Monday	Bachelor's Degree Programme	Squash tatha Smear Taknik - I
19.10.94 Wednesday	Creative Writing in English	1. A Profile of a Creative Writer 2. Open Channel
21.10.94 Friday	Management	European Community in the 90's
24.10.94 Monday	Bachelor's Degree Programme	Squash tatha Smear Taknik - II
26.10.94 Wednesday	Nutrition and Health Edu.	Voluntary Health Association in India - An Introduction
28.10.94 Friday	Management	Marketing of Services — Destination India
31.10.94 Monday	Bachelor's Degree Programme	Coupled Oscillations and Simple Harmonic Motion

Animals in Scientific Research

Dr G V Satyavati, Director General of the Indian Council for Medical Research (ICMR), advocated more guidelines for the care and use of animals in scientific research.

Inaugurating a three-day international symposium on 'Laboratory animals, resource development, experimentation and welfare — Which way to go?', at Hyderabad recently, Dr Satyavati urged the scientific community to do away with the painful animal experiments and adopt a humane approach towards them. The committee, constituted by the Indian National Science Academy, has brought out a comprehensive document comprising guidelines for the care and use of animals for research.

Though the main aim of biological research was ultimately considered to alleviate the human suffering, mankind always viewed all other forms of life as subordinate to its benefit and welfare, Dr Satyavati said. Thus, the research with the use of laboratory animals was mostly taken for granted as an essential part of the bio-medical research.

There has been a growing concern in the society about the very need of animal research on one hand and their humane use on the other. Scientists felt that while a certain type of the animal research could be substituted with 'in vitro' methods, there still was a large chunk of bio-medical research which was inescapable and statutory. However, an acute need has been felt by those using animals on the altar of science, to adopt certain universal ethical guidelines for animal experimentation, Dr Satyavati said.

The question whether the animal research could be done away with in the near future needs special attention and unbiased overview, the ICMR Director General said. As no bio-medical scientist can believe that such an ideal system can ever be achieved as certain biological processes need to be studied in the whole animal, therefore, in-vitro models may only give limited information, she said. However, no genuine researcher can ignore the need for ethical guidelines for research using animals, she added.

In his presidential address, Mr M Kamal Naidu, Special Secretary to the State Government, Forests and Energy, said most of the killings and testing for research were needless, repetitive in nature yet unavoidable. In most of the cases, there was a need to think on alternatives like the applicability of computers to take over the job of the animal by using programmed data of chemical analysis and their reaction on the animals.

He said the rhesus monkeys were first exported to the USA and then to the USSR for research as early as in 1930 and eight years later the USA started its own breeding centre with 450 animals. As their demand increased by 2.5 lakh by the Fifties, India exported two lakh monkeys to the USA alone. But this came down to 50,000 in the Seventies and was restricted to 20,000 from 1975. The reduction was due to sentimental reasons and not due to the slowing down of the research activity. After 1978, the export was totally banned by the Central Government. The rhesus requirement abroad was over 25 times compared to the domestic need which used to be 5000 per year.

Statistics in the International Wildlife Animal Trade reveal that 95 per cent of birds go as pets, four per cent for bio-medical research and the rest for zoos whereas the figures for animals were 44, 54 and two per cent respectively.

He said the total number of animal experiments has been on the rise each year. While 75 years ago it was fewer than 80,000, it reached 3500 per day in 1960 and 14,300 in 1975 or 600 per hour. The total number of experiments is likely to reach 25 million by the turn of the century.

Keeping this in view, the government enacted a legislation in 1890 and amended it in 1954 resulting in the Prevention of Cruelty to Animals Act and formation of the Animal Welfare Board. In 1968, the Centre framed the Experiments on Animals (Controls and Supervision) Rules. However, in spite of these rules, 80 per cent of the experiments were done without the use of anaesthetics, he lamented.

Mr Naidu said the use of animals being necessary, they needed to be very highly tailor-made, sterile, genetically identical etc to facilitate accurate results in research. To achieve them, it has become necessary to raise animals with the sole object of supplying them for scientific research like the poultry farms, cattle and sheep ranches, fish and prawn culture, which are meeting the food requirements of human beings.

Delivering the keynote address, Dr Jean R Maisin, Universite Catholique de Louvian, Belgium, said there were no chances of replacing all animals in research and testing in the foreseeable future.

He said experiments on animals have helped the medical research as the life expectancy rate in the USA has gone up by 25 years since the beginning of the century. The other factors which helped were hygiene and nutrition in improving human health. The laboratory animal played a vital role in promoting mankind's welfare especially in the detection of AIDS, organ transplantation and the effects of ionizing radiations on man and animal.

Despite these contributions, it was argued that the results obtained on animals were insufficient. But it was not possible by ethical and moral standards or by law to perform these experiments on humans, Dr Maisin said.

He said careful planning, refinement of techniques, development of mammalian models can lead to reduction in usage of animals for the experiments. The European Union has established the European Institute for Validation of Alternative Methods within the joint Research Centre Institute for the Environment in Ispra in Italy. This would help in reducing the use and severity of existing animal test methods and their early replacement with non-animal methods.

Contest for Teacher Trainers

National Council of Educational Research and Training (NCERT) proposes to organise an all India competition to promote experimentation, innovative practices and research in teacher training institutions of the country.

The main objectives of the programme are : to create awareness among teacher educators for improving standards through innovations and experimentation; try out new ideas and practices; undertake research; encourage them to adopt scientific approach to the solution of professional problems; and provide a forum for dissemination of research, innovative practices and creative thinking of those working in training institutions.

The competition is open to those teaching in teacher training colleges and university departments offering B.Ed./M.Ed. courses or other teacher training institutions preparing teachers for the pre-primary or elementary schools. Those working in District Institutes of Educational Training (DIETs) are also eligible to participate.

To participate in the competition professional teacher educators shall submit a paper of about 3,500 to 4,500 words in English, Hindi or any recognised regional language. These papers should not however be based on the theses or dissertations submitted to universities for any other award.

Thirty cash prizes and certificates of merit will be awarded to the papers selected in the contest. Of these twenty (20) prizes will go to those working in pre-primary and elementary teacher training institutions and the other ten (10) to those teaching in secondary teacher training colleges.

The criteria for evaluation will be (a) originality of the idea (b) presentation and organisation of the content of the paper, and (c) usefulness and applicability of the innovation in the field of teacher education.

Those selected for awards would be invited to present their papers in a national seminar. Entries for the competition must reach the Head, Department of Teacher Education and Special Education, National Council of Educational Research and Training, Shri Aurobindo Marg, New Delhi-110016 before **30 November 1994.**

Platform for Action

The United Nations Commission on the Status of Women (CSW), in its 38th session held in New York has come up with the draft of the Platform for Action, one of the major output documents of the 1995 World Conference on Women (WCW).

The Platform for Actions aims to:

* accelerate the removal of the remaining obstacles to women's full participation in all spheres of life;

* protect women's human rights throughout the life cycle; and

* mainstream women in all areas of sustainable development.

In pursuit of these objectives, the international community, governments, NGOs, and the private sector are urged to undertake strategic action to implement the Nairobi Forward Looking Strategies (NFLS) in critical areas of concern.

The identified critical areas of concern are:

* The persistent and growing burden of poverty on women;

* Inequality in access to education. health and related services and means of maximizing the use of women's capacities;

* Violence against women;

Effects of armed or other kinds of conflict on women;

* Inequality in women's access to and participation in the definition of economic structures and policies and the productive process itself;

* Inequality between men and women in the sharing of power and decision-making at all levels;

Insufficient mechanisms at all levels to promote the advancement of women;

* Lack of awareness of, and commitment to, internationally and nationally recognized women's human rights;

* Insufficient use of mass media to promote women's positive contributions to society; and

* Lack of adequate recognition and support for women's contribution to managing natural resources and safeguarding the environment.

In defining the section on critical areas of concern, it was agreed that it should begin with a preambular paragraph that would note the interdependence of the critical areas of concern, their relationship with the implementation of the NFLS, and the fact that the order of presentation reflects the concern of women and that all are of equal priority.

The critical areas of concern cut across the boundaries of *equality, development,* and *peace,* the themes of the United Nations Decade for Women which were also adopted as the themes of the 1995 WCW. Following are the strategic objectives derived from the critical areas of concern:

* Enable women to overcome poverty;

* Ensure women's access to quality education and training for self-reliance at all levels and in all fields and sectors;

* Increase women's full access throughout the life cycle to appropriate, affordable and quality health care and related services;

* Eliminate violence against women;

* Increase the participation of women in conflict resolution and protect women in armed and other kinds of conflict and foreign occupation;

* Promote women's economic self-reliance including access to employment, appropriate working conditions and control over economic resources—land, capital and technology.

* Strengthening factors that promote the full and equal participation of women in power structures and decision-making at all levels and all areas;

* Integrate gender equality dimensions into policy and program planning and implementation at all levels and in all areas;

* Apply and enforce international norms and standards to promote and safeguard the full and equal enjoyment by women of all human rights;

* Enhance the role of the traditional and modern communications media effectively to promote awareness of equality between women and men; and

* Promote action to develop the mutual responsibility of women and men to achieve equality.

The actions to be taken based on the strategic objectives were also identified in the draft and these also encompass the themes of the conference. It was also agreed that institutions responsible for specific actions as well as the role of international cooperation, including multilateral and bi-lateral donors and the international community be identified.

The draft document also spelled out the institutional arrangements and financial arrangements for implementation and monitoring of the plan of action.

All suggestions made on the draft should be reflected in the revised text to be presented to the CSW at its 39th session which will take place from 15 March to 05 April 1995 in New York.

Scholarship on Women's Studies

The University of British Columbia (UBC) offers a Visiting Scholar Program under its Centre for Research in Women's Studies and Gender Relations. The program aims to stimulate feminist research and facilitate the exchange of ideas and collaboration among scholars at UBC and elsewhere.

During their appointment, scholars are expected to participate regularly in interdisciplinary seminars and discussion groups. They will also give a public lecture as part of the Centre's lecture series during their term.

The university's academic year runs from September to April. Applicants are encouraged to schedule their visit to the Centre during these months. They are also advised to spend one to six months in affiliation with the Centre. The deadline for application is on 31 October 1994. Applications may be sent to : Visiting Scholar Program, Centre for Research in Women's Studies and Gender Relations, 1896 East Mall, University of British Columbia, Vancouver, Canada, V6T IZI.

New Oil Extraction Method

In a significant breakthrough, the Indian Institute of Technology, New Delhi has claimed to have developed a technology package which is likely to substantially cut down the cost of production in industries like perfumery, petrochemicals, agrochemicals, soft drinks, vegetable oil, spices, food, natural insecticide and pharmaceuticals.

The new technology revolves around a supercritical fluid extraction system which is much superior to traditional methods used for extraction of oils from sandalwood, ginger, costus, clove and cumin, removing organic pollutants from waste water. It separates pesticide from essential oils and food products, aromatic isomers from mixtures and low molecular weight materials from polymer and light component from coal.

Prof. R.C. Maheshwari and Dr. S.N. Naik who were instrumental in development of the new environment friendly technology, said it would offer higher yield, pure essential components and would provide products free from any kind of toxicity.

They said the technology would require only moderate temperature and pressure for low molecular non-polar constituents present in the botanicals. The technology is based on use of Carbon Dioxide for extraction purposes.

Royal Medal for Prof. Chandrasekhar

Professor Sivaramakrishna Chandrasekhar, Director of the Centre for Liquid Crystal Research, Bangalore and Bhatnagar Fellow of CSIR has been awarded the prestigious Royal Medal of the Royal Society of London "in recognition of his many new discoveries in the understanding of liquid crystals, for a synthesis of the subject in his seminal book, The Invention of Discotic Liquid Crystals and for elucidating their remarkable properties."

Professor Chandrasekhar initiated studies on the physics of liquid crystals in 1961 when he joined the University of Mysore. At that time few scientists were aware of these unusual phases of matter that occur between the solid and liquid states in certain materials. The subject has since developed to become an exciting area of modern condensed matter physics with important applications, especially in display technology. The annual world market for liquid crystal display for computers, TV screens, etc now exceeds $ 3.5 billion and is increasing rapidly.

It is generally agreed that Professor Chandrasekhar and his students in Mysore and Bangalore played a significant role in promoting the growth of world wide interest in the physics of liquid crystals. He was elected FRS in 1983 and has received many national and international honours.

The presentation of the medal will take place in London during the Anniversary meeting of the Royal Society on 30 November, 1994.

News from Agricultural Universities

National Symposium on Meat and Milk Industry

The three day Silver Jubilee National Symposium on 'Meat and Milk Industry: Trends and Developmental Strategies' was held at the Chaudhury Charan Singh Haryana Agricultural University (CCSHAU). Delivering the presidential address, the Vice-Chancellor, Dr. S. Arya said that to give boost to the export of animal products as also to provide better returns to the farmers it was imperative on the part of the expert scientists that research and extension work pertaining to development of post-harvest technology, livestock, fisheries and diversification of agriculture was taken up on priority basis. He said that growth in the animal husbandry and its allied areas would assist in increasing employment and income redistribution in favour of small farmers and landless labourers who constituted a big chunk of our population.

Underlining the importance of value addition in agriculture, Dr. Arya said that it could be achieved by concentrated thrust on processing, marketing and storage of food products including animal products which though perishable in nature were of high biological and nutritive value. These were necessary for development of agro-processing industries which was one of the key areas for development of agriculture.

He revealed that though the CCSHAU had taken a lead in research and extension work pertaining to the animal products yet keeping in view the fast pace of the work at the international level, a modern milk processing and packing plant with all required facilities and infrastructure will be established at the University very shortly.

Earlier, Mrs. Promilla Issar, Jt. Secretary, Ministry of Food Processing Industries, Govt. of India read out inaugural address on behalf of Sh. Tarun Gogoi, Union Minister of State for Food Processing Industries, who could not attend the inaugural session because of his indisposed health. In his address Sh. Gogoi said that though 80 per cent of the Indian communities were non-vegetarian and a large part of the population depended on the production of meat alone, the meat industry had so far been neglected. Barring a few meat animals like pig, sheep and goats, most of the animals used for meat purposes were not specifically reared for this purpose. Sh. Gogoi regretted that currently buffaloes, not useful for other purpose, were being used for production of meat. He emphasised that buffaloes and goats used for the production of meat needed to be selectively reared on scientific lines so that quality meat was produced.

Congratulating the CCSHAU experts for their laudable efforts in the area of animal products technology, breeding, feeding and management, Sh. Gogoi said that they had enabled Haryana in becoming the number one milk producing state as also the home of Murrah buffaloes.

Dr. A.K. Chatterjee, former Animal Commissioner, Govt. of India read out the keynote address. More than 150 delegates from all over India participated in the Seminar and deliberated on the technological progress made by their respective institutes, ways and means of improving meat trade, and optimum exploitation of animal resources.

News from UGC

Countrywide Classroom Programme

Between 1st October to 15th October, 1994, the following schedule of telecast on higher education through INSAT-ID under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 1.00 p.m. to 2.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

1.10.94

"Molecular Vibrations – Part I"

"Looking at Sociology – Part I"

"Father of Hybrid Rice"

2.10.94

"Book Fare"

"Four Great Inventions in Ancient China"

"The Week Ahead"

4.10.94

"Burning Bright – Sun a Viable Energy Option"

"Tropical Cyclone"

"Yours Sincerely"

6.10.94

"Aluminium – Part I"

"The Architectural Wonders of Mahabalipuram"

"Commonweath Literature"

8.10.94

"Molecular Vibrations – Part II"

"Looking at Sociology – Part II"

"Ecological Modelling"

9.10.94

"New Horizons"

"Tobacco and Health"

"The Week Ahead"

11.10.94

"Hydroelectric Power Generation"

"Mapping Our Earth"

"A Story Inside the Shell"

13.10.94

"Aluminium — Part II"

"Writing a Resume"

"Vocational Education — Chinese Style"

IInd Transmission

1.00 p.m. to 2.00 p.m.

1.10.94

"Programme on Management"

"Book Fare"

"The Week Ahead"

2.10.94

No Telecast

3.10.94

"Conservative and Non-conservative Fields"

"Current Affairs : Economics and Commerce – Part II"

"Yours Sincerely"

4.10.94

"Valmiki Ramayana and Public Administration"

"Revolution in Orthopaedics – Part V : Joint Replacements"

5.10.94

"Triangular Survey of Topographic Mapping"

"Introduction to Marine Archaeology : Heritage from the Depths"

"The Indian Rose"

6.10.94

"Esprit De Corps"

"Tamil Nadu Archives – A Treasure House Par Excellence"

"A World of English : The Good Language Learner"

7.10.94

"New Horizons"

"Forest Settlements in Gir"

8.10.94

"Programme on Management"

"A Tree and A Creeper – Money for the Reaper"

"The Week Ahead"

9.10.94

No Telecast

10.10.94

"Human Resource Development — Part XIII : New Trends in HRD"

"Group Dynamics in Rural Marketing"

"Nematode : The Hidden Killer"

11.10.94

"Wood Polymers"

"Perspective in Distance Education"

"Polio"

12.10.94

"Cost Reduction Technique in Housing"

"Sulahkul Religious Policy of the Moghuls"

"Teletext"

13.10.94

"Microwave Cooking"

"Life from Lifeless"

"History and Literature – Common Meeting Grounds"

14.10.94

"Fractal Forms"

"Bats Capture Frog from Water"

"Environmental Odyssey"

15.10.94

"Programme on Management"

"Sculpturing"

"The Week Ahead"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

3.10.94

"वामन वृक्ष – भाग I"

"सामूहिक विवाह"

5.10.94

"शिक्षा की रेल चली – II"

"छोटी–छोटी बातें"

7.10.94

"समझ सिनेमा की – भाग 13"

10.10.94

"वामन वृक्ष – भाग II"

12.10.94

"अध्यापन के प्रतिमान – भाग I"

"कशीदा"

14.10.94

"समझ सिनेमा की – भाग 14"

"औद्योगिक क्षेत्र में मानवी सम्बन्ध – I"

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PRINCIPAL

BOOK REVIEW

Off to a Good Start

Tarlok Singh*

Trends in Social Science Research. Biannual. Edited by Chitra Srivastava and Suresh K Srivastava, (26 Uttaranchal, 5 I.P. Extension, Delhi-110 092) Vol. 1. No.1 Annual Suscription Rs. 90 (Individual) Rs. 150 (Institutions) Single Copy Rs. 50/-

Most social science journals in India are being published either by Associations representing different disciplines or by well-established institutions. *Trends in Social Science Research* (TSSR) is a new six-monthly journal which owes its inception to the initiative of a group of scholars mainly from Delhi University drawn together by Dr. Chitra Srivastava of the Department of Applied Psycho logy in the South Campus and Dr. Suresh K. Srivastava of the Department of History of the Hansraj College, who are also the Editors of the Journal.

The TSSR has been brought into existence with three main aims: to provide an interface between researchers and users of research in social sciences across various disciplines, to emphasise the cognitive and relevance value of social sciences in relation to the needs of society, and to encourage younger social scientists to share their findings relating to the Indian sub-continent in general and Indian society in particular. In terms of areas of interest the net has been cast widely and includes not only social, economic and political themes, but also culture, history and archaeology, education, contemporary studies, women studies, studies relating to disadvantaged groups, language learning, history of science and technology, and India and its neighbours. For future issues the intention appears to be to indicate broad themes in advance. Thus, for the third issue due in June 1995, the editors have in view Family Studies as the main topic.

The editors of the TSSR have been able to secure the interest of an influential Advisory Committee and a competent and devoted working team as the editorial board.

The first issue of TSSR (June 1994) contains 13 principal articles and reviews of seven books, besides reports on three recent conferences. The articles cover several fields of social science interest. Two of them fall within the area of political science, two of psychology, two of language studies, three of agriculture, rural development and environment, and four others devoted respectively to economy, criminology, sociological interpretation of medieval history and accreditation in higher education.

Brief reference may be made to some of the contributions in the first issue of the Journal. Professor Mahendra Prasad Singh has presented an objective statement on the current attitudes of Indian political parties in relation to communalism. Professor S.K. Chaube has spelt out the implications of the recent Supreme Court judgement on the use of Article 356. Professor Harish C. Verma has drawn attention to the early social impact on Hindu and Muslim society of the consolidation of Muslim rule between 1200 and 1500 A.D. In pleading for a value-based Psychology, Professor Lila Krishnan has argued that in the Indian context psychology as a science and as a profession will become more meaningful to society at large if the moral and social implications of research findings are emphasised and there is a conscious value-orientation in the direction of social good and promotion of social and human welfare. In a carefully documented contribution Professor Durganand Sinha has reviewed psychological studies highlighting the relationship between deficiencies in the environment of the deprived and the development of intellectual, cognitive and perceptual skills, learning and mediating processes, memory, concept formation, language skills and academic performance. While research findings indicate that deficiencies generated by the circumstances of poverty are not irreversible, no less than a third of the scholastic attainment profile of the child is already decided when he or she starts the first year of primary school. Therefore appropriate action must begin early in order to attenuate most of the effects of disadvantage. The intervention strategy should be targeted not only on specific cognitive, linguistic or motivational drawbacks, but also on the family setting. While poverty does not seem to affect adversely the basic abilities and intelligence, it arrests greatly the acquisition of certain skills that are relevant for proper functioning in school. Intervention should be directed to removing these disabilities and incompetences. What the disadvantaged child lacks in his learning environment has to be provided either by the enrichment of his environment or in the school setting. Research findings indicate that if proper intervention is made at the appropriate time, the disadvantaged child need not remain in the condition of poverty but can acquire appropriate cognitive, linguistic and other skills to develop out of it.

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* *Editor, IASSI Quarterly, Indian Association of Social Science Institutions (IASSI), New Delhi.*

The issue of TSSR under review has two authoritative contributions in the area of language studies by Professor Shivendra K. Verma on certain aspects of second language teaching and by Professors A.K. Srivastava and L. Devaki on bilingualism and cognition in multilingual India. Professor Sachchidananda has examined issues relating women's development to environmental problems. Two contributions draw on empirical investigations, one on the working of a women's milk co-operative and the complex of human and social factors bearing on it, the other on the linkages between drug abuse and criminality. An article by Professor Lallan Prasad looks at the current state of the Indian economy in the light of changes over the past three years and concludes that a clear cut direction has yet to emerge and several factors at work need to be closely watched. A final article examines the need for accreditation in higher education in India and the processes and considerations which are involved if accreditation is to lead to general improvement in standards.

Altogether, it may be said that *Trends in Social Science Research* has got off to a good start. Succeeding issues will no doubt strive to achieve a sharper focus on a specific range of topics indicated in advance.

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REGISTRAR

davp 1151(4)94

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

SOCIAL SCIENCES

LIBRARY & INFORMATION SCIENCE

1. Singh, Jai Prakash. **Development of a model information retrieval system for laser technology.** Delhi.

2. Srivastava, S S. **Statistical information system for India.** Jiwaji. Dr R Satyanarayana, Prof and Head, School of Library and Information Science, Indira Gandhi National Open University, Maidan Garhi, New Delhi and Dr S M Tripathi, Prof and Head, Department of Library and Information Science and Dean, Faculty of Arts, Jiwaji University, Gwalior.

3. Venugopal, M V. **Cataloguing since Cutter : A topographical and dialectical account of the theoretical and practical development of art and science of bibliographic control.** Jiwaji. Dr S M Tripathi, Prof and Head, Department of Library and Information Science and Dean, Faculty of Arts, Jiwaji University, Gwalior.

PSYCHOLOGY

1. Bandyopadhyay, Sumita. **To study the personality pattern and nature of adjustment of the adolescents of working mothers.** Calcutta.

2. Makhania, Khushnuma Fali. **A comparative study of the adjustment and achievement level of the physically handicapped and normal adolescents.** Gujarat. Dr (Mrs) K K Bhatt, School of Psychology, Philosophy and Education, Gujarat University, Ahmedabad.

3. Mallik, Padmaja. **Influence of Women's home life on their work-life.** Calcutta.

4 Mathur, Babita R. **A study of personality factors in patients with common eye diseases.** Gujarat. Dr P H Raval, School of Psychology, Philosophy and Education, Gujarat University, Ahmedabad.

5. Mehta, Nikhila Divyang. **A non-traditional approach to marital adjustment among working and conventional couples as a function of sex role orientation and marital locus of control.** Gujarat. Dr B M Contractor, L & C Mehta Arts College, Ahmedabad.

6. Nagaraju, K. **A comparative study of agricultural progressiveness in different districts of Tamil Nadu.** Madras. Dr P Ananthakrishnan, Prof and Head, Department of Psychology, University of Madras, Madras.

7. Sahoo, Santosh Kumar. **Agonistic behaviour of rhesus monkeys, *Macaca mulatta* and Hanuman langurs, *Presbytis entellus* in Shimla.** HP.

8. Samuel, Susan. **Influence of television and video on the aggression level of adolescents.** Madras. Dr P Ananthakrishnan, Prof and Head, Department of Psychology, University of Madras, Madras.

9. Sharma, Reeta. **A study of leadership styles, effectiveness and motivational correlates.** Roorkee.

10. Sunil Kumar. **Level of aspiration, achievement motivation and organisational climate as related to productivity in public and private sector enterprises.** HP.

11. Tabassum. **A study of influence of parental acceptance on depression, anxiety and self-confidence amongst the handicapped.** AMU. Prof (Mrs) Hamida Ahmad, Reader, Department of Psychology, Aligarh Muslim University, Aligarh.

SOCIOLOGY

1. Ayub, K. **Psycho-social study of male adolescent workers in the unorganized sector with special reference to Greater Gwalior.** Jiwaji. Dr (Mrs) Usha Govila, Principal, K R G College, Gwalior.

2. Dhal, Srinibas. **Political socialization of urban elites : A case study of Rourkela Steel City in Orissa.** Sambalpur. Prof A P Padhi, Director, College Development Council, Sambalpur University, Jyoti Vihar, Burla.

3. Girolkar, Shraddha. **Kamkaji matayon ka ek samajshastriya adhyayan : Audyogik Nagar Korba mein.** Ghasidas. Dr (Mrs) Damyanti Thakur, Lecturer, Govt Girls P G College, Bilaspur.

4. Mukhia, Banani. **Women and family in Bengali fiction in the late nineteenth and early twentieth century.** Jamia. Prof Mohini Anjum, Department of Sociology, Jamia Millia Islamia, New Delhi.

5. Saxena, Sangita. **Shatpath Brahman kaleen samaj vyavastha ka vishleshnatmak adhyayan.** Jiwaji. Dr R M Saxena, Department of Sociology, Govt Gandhi Degree College, Balaji Mihona, Bhind.

6. Shrivastava, Anjana. **Audyogik parivesh mein kamkaji mahilayon kee bhumikayen tatha apekshayen.** Ravishankar Dr S K Shrivastava, Reader, School of Studies in Sociology, Pt Ravishankar Shukla University, Raipur.

SOCIAL ANTHROPOLOGY

1. Chellaperumal, A. **Changing patterns of economic and political structures in a Tamil Nadu village.** Madras. Prof N Subba Reddy.

2. Vinod Kumar. **Kamar Janjati ka samajik manav shastriya adhyayan.** Ravishankar. Dr (Smt) Manjula Guha, Reader, School of Studies in Anthropology, Pt Ravishankar Shukla University, Raipur.

SOCIAL WORK

1. Uma Maheswari, P T. **Impact of correctional programmes on female prisoners.** Madras. Dr R Thiyagaraj.

POLITICAL SCIENCE

1. Acharyya, Subal Kumar. **Administrative response to civic problems : A case study of Bally Municipality in the District of Howrah.** Burdwan. Prof S K Roy, Department of Political Science, University of Burdwan, Burdwan.

2. Bhagat, Ritu. **The Muslim League and the movement for Pakistan, 1940-1946 with special reference to Muslim Majority Provinces.** JNU. Dr Uma Singh, Centre for South, Central, South East Asian and South West Pacific Studies, Jawaharlal Nehru University, New Delhi.

3. Chaudhary, Chitra. **Public opinion in Soviet political system since 1977 Constitution.** JNU. Prof Devendra Kaushik, Centre for Soviet and East European Studies, Jawaharlal Nehru University, New Delhi.

4. Jha, Sanjay Kumar. **Reform in Hungary : A socio-political study.** JNU. Dr Shashi Kant Jha, Centre for Soviet and East European Studies, Jawaharlal Nehru University, New Delhi.

5. Khan, Azra. **Indo-Bangladesh relations since 1972.** AMU. Dr Mohammad Mehmood, Reader, Department of Political Science, Aligarh Muslim University, Aligarh.

6. Lalkima, Lalkima. **Social welfare administration in Mizoram, 1972-1990.** Gauhati. Dr V V Rao, Prof Emeritus, Gauhati University, Guwahati.

7. Modi, Rekha. **Dakshin Asia Sehyog Sangathan aur Bharat, 1985 se 1988.** Jiwaji. Dr M P Modi, Department of Political Science, Govt P G College, Morena.

8. Mukhopadhyay, Chandidas. **Stigma of criminality on the Kharias of Purulia.** Burdwan. Sri A Mitra, Reader, Department of Political Science, University of Burdwan, Burdwan.

9. Pathak, Pradeep. **Nuclear disarmament as a factor for world peace.** Jiwaji. Dr N K Tiwari, Department of Political Science, Govt Bhagwat Sahai College, Gwalior.

10. Shrivastava, Ashoka. **Bharatiya Sansad aur Nyayapalika ke antrasambandhon ka adhyayan : Maulik adhikaron ke vishesh sandarbh mein.** Vikram. Dr (Mrs) Rashmi Shrivastava, Lecturer, Department of Political Science, Vikram University, Ujjain.

11. Tiwari, Dilip Kumar. **Niti nirdeshak tatvon ke antragat panchayati Rajya vyavastha ka mulyankan : Madhya Pradesh ke vishesh sandarbh mein, 1985 se vartman kal tak.** Barkatullah. Dr K G Shah, Prof, Department of Political Science, SSL Jain College, Vidisha.

12. Vagvan, Shankarlal. **Jila nyayik prashasan ka vartman swaroop, trutiyan evam unke nirakaran ke sambhavit upaya: M P ke Jhabua Jile ke vishesh sandarbh mein ek rajnaitik adhyayan.** Vikram. Dr O P Gupta, Reader, Department of Political Science, Govt College, Mandsaur.

13. Verma, M S. **Indo-German perspectives on development cooperation, 1969-1982.** JNU. Prof H S Chopra, Centre for American and West European Studies, Jawaharlal Nehru University, New Delhi.

14. Zinat Ara. **Central state relation in India with special reference to Kerala and UP.** Jamia. Prof Zahoor Mohammad Khan, Department of Political Science, Jamia Millia Islamia, New Delhi.

ECONOMICS

1. Al-Zubi, Naser Yousef. **Price controls impact on profitability and growth of pharmaceutical firms in India.** Gujarat. Dr B C Thaker, S P Institute of Economics and Social Research, Ahmedabad.

2. Bharadwaj, Kamal. **Chambal Sambhag ke audyogik vikas mein Madhya Pradesh Audyogik Kendra Vikas Nigam, Gwalior kee bhumika ka alochnatmak adhyayan.** Jiwaji. Dr S K Shukla, Department of Economics, Jiwaji University, Gwalior.

3. Chaturvedi, Manish. **Role of lead bank scheme in the economic development of marginal and small farmers of Gwalior District.** Jiwaji. Dr S N Chaturvedi, Jiwaji Nagar, Gwalior.

4. Das, Uma. **A study of infant mortality in Kamrup District in Assam since independence.** Gauhati. Dr P C Goswami, Prof (Retd), Suwagpur, Rohabari, Guwahati.

5. Desai, Naishadh Kumar Vimochanrao. **Investment behaviour of Life Insurance Companies in the United States : A historical, analytical and empirical overview.** Kurukshetra.

6. Ganapathi, Rathod. **An economic analysis of trade union movement with reference to cement industry in Gulbarga District of Karnataka.** Gulbarga. Dr M S Kallur, Reader and Head, Department of Economics, Gulbarga University, Gulbarga.

7. Guleria, Rajendra Singh. **Constraint analysis for increasing foodgrain production in Himachal Pradesh.** H P Krishi. Dr T V Moorti, Department of Agricultural Economics, College of Agriculture, Palampur.

8. Kanchan, Rajiv. **Datia Jile mein Jila Sehkari Bhoomi Vikas Bank ka krishi vikas per prabhav.** Jiwaji. Dr R P S Rana, Reader, Department of Economics, Jiwaji University, Gwalior.

9. Kandaswami, N. **The financial management of a South Indian Temple : A case study of Palani Temple.** Madras. Dr (Mrs) L Jayalakshmi.

10. Kathia, Pradeep Kumar. **Natural resource management: A case study of reservoir fisheries in Himachal Pradesh.** Y S Parmar. Dr S C Tewari, Department of Social Sciences, College of Forestry, Solan.

11. Majumdar, Anjan. **Some aspects of technological change in Indian agriculture.** Calcutta.

12. Md Ali Ashraf. **Non-Government organisations, NGOS and rural poverty alleviation in Bangladesh : An analytical study of Bangladesh Rural Advancement Committee and Commilla Proshika.** Calcutta.

13. Ratti, Krishan Dev. **Taxation of agriculture in Himachal Pradesh.** HP.

14. Sethi, Archana. **Bharatiya miyamit vyapar mein sanrachnatmak parivartan : M P ke sandarbh mein vishesh adhyayan.** Vikram. Dr G C Khimsera, Reader, Department of Economics, Govt College, Mandsaur.

15. Sunil Kumar. **An evaluation of the performance of General Insurance Corporation of India with special reference to the United Indian Insurance Company Limited.** Bihar. Dr C K P Shahi, Department of Economics, Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur.

16. Tiwari, Ashwani Kumar. **An economic analysis of small farmers in Madhya Pradesh.** Ravishankar. Dr C S Mishra, Prof

and Head, School of Studies in Economics, Pt Ravishankar Shukla University, Raipur.

17. Vaidya, Chander Shekher. **Resource use efficiency in field crop production across farm size categories in different agro-climatic zones in Himachal Pradesh.** HP.

PUBLIC ADMINISTRATION

1. Abbu, K. **Housing policy in Tamil Nadu.** Madras. Dr R Thandavan.

2. Hati, Dileep Kumar. **State control and supervision over municipal bodies in Orissa : A case study of Sundargarh Municipality.** Sambalpur. Prof A P Padhi, Director, College Development Council, Sambalpur University, Jyoti Vihar, Burla.

3. Verma, Babu Ram. **Civil Service in two states : A comparative study of Haryana and Himachal Pradesh.** HP.

4. Verma, Laiq Ram. **Human resources development in industrial sector in India with special reference to BHEL and Escorts.** HP.

5. Yenuse, R **The Congress Government and its administration in Tamil Nadu, 1952-1967.** Madras. Dr R Thandavan.

MILITARY STUDIES

1. Gangwar, Nirpendra Singh. **Bharatiya yuddhon kee achar samhita.** Barkatullah. Dr M Y Khanwelkar, Department of Military Science, Motilal Vigyan Mahavidyalaya, Bhopal.

2. Perlakaruppu, M. **Changing population of Assam and India's national security : A strategic study of a border state.** Madras. Dr V Karuppaiyan.

3. Surendra Singh. **A comparative study of civil defence in India, Britain and America.** Barkatullah. Dr M Y Khanwelkar, Department of Military Science, Motilal Vigyan Mahavidyalaya, Bhopal.

EDUCATION

1. Dabhi, Ramilaben Bhanabhai. **An investigation into the impact of metalinguistic abilities upon the reading of first grade children.** Gujarat. Dr B M Modi, Prakash Education College, Ahmedabad.

2. Hema. **Developing value judgement of secondary school students for future values of the year 2005 A D through VAM.** Devi Ahilya. Dr B K Passi, Department of Education, Devi Ahilya Vishwavidyalaya, Indore.

3. Jain, Narain Das. **A biographical study of the characteristics of the National Awardee Teachers with special reference to personal, social and professional variables.** Barkatullah. Dr D C Upreti, Reader, Department of Education, Regional College of Education, Bhopal.

4. Joseph, Philip. **Approaches to management of education : A comparative study of John Dewey and Mahatma Gandhi.** Madras. Dr D Raja Ganesan, Reader, Department of Education, University of Madras, Madras.

5. Lalitha, Y R. **A study of creativity in relation to teaching competency of B Ed teacher trainees studying in few B Ed colleges of education of Bangalore University.** Bangalore. Dr D Shivappa, No 1266 'Vidyaniketan' Housing Board Colony, Vijayanagar North, Bangalore.

6. Maiti, Nimaichand. **An academic and professional profile of university teachers in West Bengal.** Calcutta.

7. Nath, Premada Bora. **A critical study of the organisation and administration of library services in Kamrup District and its impact on adult education.** Gauhati. Dr L Das, Prof (Retd), Rajgarh Road, Chandmari, Guwahati.

8. Nautiyal, Yogeshwar Prasad. **A study of socio-demographic and psychological variables of destitute home adolescent students.** HP.

9. Suera, Govindbhai Sukaji. **Contribution of the tribal sub-plan in the education of adivasis of Sabarkantha District.** Gujarat. Dr (Mrs) Y F Patel, Smt M N K Dalal Education College, Ellisbridge, Ahmedabad.

10. Vaz, Leons Wilfred. **Investigation of selected anthropometric characteristics and physical fitness components as predictors of performance in Judo.** Jiwaji. Dr Rajendra Singh, Director, Department of Physical Education, Jiwaji University, Gwalior.

COMMERCE

1. Agrawal, Yogita. **Jiwaji Vishwavidyalaya, Gwalior mein vitt prabandhan, varsh 1985 se 92 tak.** Jiwaji. Dr Surendra Maheshwari, Department of Commerce, Madhav Mahavidyalaya, Gwalior.

2. Bandyopadhyay, Debasish. **Implementation of the lead bank scheme in the district of Hooghly, West Bengal : A case study.** Burdwan. Prof A Mallik, Department of Commerce, University of Burdwan, Burdwan.

3. Bhosle, Ram Rao. **Vidisha Jile mein laghu udyogon ka adhyayan.** Barkatullah. Dr P C Jain, Department of Applied Economics and Business Management, SSL Jain College, Vidisha.

4. Chandra, Keya. **Dividend policy in the Indian jute industry : An empirical analysis.** Calcutta

5. Ghosh, Santanu Kumar **Financial management decisions : The Indian scene.** Burdwan. Prof A Mallik, Department of Commerce, University of Burdwan, Burdwan.

6. Iqbal Sayeed. **Performance appraisal of the Bihar State Road Transport Corporation, BSRTC : A comparative study with the Uttar Pradesh State Road Transport Corporation, UPSRTC.** AMU. Prof Nafees Baig, Department of Commerce, Aligarh Muslim University, Aligarh

7. Karmakar, Madhusudan. **Share price volatility and efficient market hypothesis : An analysis of Indian experiences.** NBU.

8. Lele, Madhuri Pradeep. **Jilhastariya niyojan : Nagpur Jilhayancha vishesh abhyas, kal 1974 te 1991.** Nagpur Dr Vijay Upgade, Reader and Head, Department of Commerce, Shri Binzani Nagar Mahavidyalaya, Nagpur.

9. Parmar, Jai Singh. **Industrial relation in public sector : A case study of Himachal Road Transport Corporation.** HP.

10. Patel, Madan Lal. **Madhya Pradesh ke arthik vikas mein Ekikrit Grameen Vikas Karyakram evam anya grameen vikas karyakramon ka tulnatmak adhyayan : Jabalpur Jile ke vishesh sandarbh mein.** Durgawati. Dr C N Shukla, Mahakoshal Arts and Commerce College, Jabalpur

11 Shah, Pareshkumar Popatlal. **Costing system for the electronics industries, telecommunication and computers.**

(Contd on page 36)

Ministry of Human Resource Development
(Department of Education)
ES - 4 Section

NEHRU CENTENARY BRITISH FELLOWSHIPS 1995-96

I. Applications are invited from Indian Nationals on plain paper in the format given below for the award of 15 (fifteen), Nehru Centenary British Fellowships for the year 1995-96 tenable from 1st October 1995 for higher studies/research in the United Kingdom. These scholarships/Fellowships will be offered in the following subject-fields :

1. Economics
2. Energy Conservation
3. English Language
4. International Relations
5. Small Business Development

II. LEVEL : These scholarships/Fellowships are awarded for (a) research master's, research attachments (including postdoctoral attachments) and work related attachments. (b) Ph.Ds. Academics are eligible for the fellowships but applications are encouraged from non-academics particularly working in relevant fields.

III. DURATION : Generally one year for (a) above and three years for (b) above. Applications for one year awards are particularly welcome as only a small proportion of awards in any year will be for three year Ph.Ds. Applications are also welcome for shorter periods for study attachments as work related projects.

IV. MINIMUM QUALIFICATIONS : Uniformly good academic record with First Class Master's degree in the subject-field selected or in a related field for studies leading to doctoral degree and for post-doctoral studies. The candidates must have completed tertiary education in English medium.

V. VALUE OF SCHOLARSHIP/FELLOWSHIP : Scholarships/Fellowships cover economy class air-passage (both ways) to scholar only, fees, adequate maintenance and other allowances.

VI. AGE : Candidates should not be above 34 years of age as on 30.9.1994, i.e., those who were born earlier than 1.10.1960 are not eligible to apply. Preference will, however, be given to candidates who are below the age of 30 years. The upper age limit may be relaxed by two years in the case of SC/ST candidates.

VII. LAST DATE FOR THE SUBMISSION OF APPLICATION : Application on plain paper (in the format given below) alongwith the required documents (attested copies of all certificates/degrees/Diploma have to be attached) should reach the **Under Secretary (ES-4 Section), External Scholarships Division, Ministry of Human Resource Development (Department of Education), A1/W3, Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi - 110001 latest by 10.10.1994.**

VIII. IMPORTANT INSTRUCTIONS :

1 A candidate may apply for only one subject of his or her choice.

2. Twice the number of nominations are invited by donor country against the actual number of scholarships to be awarded by them. The final selection rests with the donor Government.

3. Nomination of a candidate by Government of India does not guarantee selection or placement in the donor country. The donor country will make its own selection out of the nominees recommended.

4. Mere fulfilment of minimum requirements as laid down in the advertisement does not qualify a candidate for interview. Interview letters are sent only to a limited number of candidates after their applications are examined by the Selection Committee of Experts.

5. Applications must be accompanied by attested copies of all certificates regarding date of birth, diplomas, degrees, marks sheet in respect of all the examinations passed alongwith one copy of recently taken passport size photograph with signature thereon (to be pasted on the application form.) (Certificates should be attested by the competent authority. Self-attested certificates will not be accepted).

6 Candidates who have already been abroad for studies/training/specialisation either on Scholarships or on their own, for a period exceeding six months are eligible to apply if they have been in India for at least two consecutive years after returning from abroad.

7. Candidates who are abroad, will, if called for interview, have to travel at their own expense. Selected candidates will be required to execute a bond with a surety, to return to India immediately on completion of training/studies, alongwith other conditions including stay in India for two years.

8. In case of candidates qualifying from Universities/Institutions which do not give class or Division, requirements in lieu of 1st Class would be 60% marks. Where grades are awarded, the candidates are required to furnish **exact percentage of marks and indicate the conversion formula.**

9. Candidates will be expected to have some knowledge of India and of the donor country.

10. Candidates who are employed must apply through their Employers. Candidates belonging to the All India Services etc. should send their applications through their Cadre Controlling Authority. (No Objection Certificate from employer should invariably be submitted at the time of interview, failing which they will not be allowed to appear for interview.)

11. Candidates belonging to Sc/ST community, must attach an attested copy of certificates from the competent authority, i.e. First Class Magistrate (S.D.M./District Magistrate/Collector).

12. While indicating the period of stay abroad, candidates should mention the specific dates.

13. As these scholarships/Fellowships are offered by Foreign Government, applications should be submitted in English.

14. Applications in subject-fields other than those specified in the advertisement will not be considered.

15. Candidates, who do not possess the requisite qualifications need not apply.

16. Candidates must furnish a clear and precise programme of study/research (minimum 500 words) justifying that their study/research can be carried out in United Kingdom. Candidates are advised to describe their research proposals carefully as these will be a primary consideration in selection.

17. Incomplete applications and applications received late after the stipulated date will not be considered and no correspondence will be entertained.

18. Documents submitted alongwith the application will not be returned. Hence, candidates are advised to send only attested copies of the certificates.

19. **Canvassing in any form will be a disqualification.**

20. In case no interview letter is received by a candidate upto 31st December, 1994, it may be presumed that he/she has not been selected. No correspondence in this regard will be entertained.

21. **The decision of the Selection Committee shall be final. No Representations in this regard will be entertained.**

N.B. : NO APPLICATION FORMS ARE SUPPLIED BY THIS MINISTRY.

NOTE : BEFORE FILLING UP THE APPLICATION, CANDIDATES ARE ADVISED TO GO THROUGH THE INSTRUCTIONS CAREFULLY.

PROFORMA FOR APPLICATION

RECENT PASSPORT SIZE PHOTOGRAPH DULY SIGNED AND (NAME SHOULD BE GIVEN IN CAPITAL LETTERS) TO BE PASTED HERE. WITHOUT PHOTO APPLICATION WILL BE TREATED AS INCOMPLETE.

1 Name of the Scholarship Scheme :

2. Subject :

(Indicate any one of the subjects given in the advertisement).

3. (i) Name & Telephone No. (if any) in block letters with full mailing address :

Shri/Kum/Mrs/Dr.

(ii) Full name of Father/Mother/Guardian

(Note : Candidates may name one or more of these at their option).

(iii) Marital Status :

4. Date of birth and the State to which the candidate belongs (Certificate regarding proof of age to be attached).

5. Whether a member of SC/ST : (If so, give full particulars. Enclose certificate duly signed by 1st Class Magistrate).

6. Academic record starting from High School/Higher Secondary. (Attested photostat copies of certificates to be attached).

Name of the University/ Board/Instn.	Examination passed	Year of passing	Division/ Class with position, if any*	%ge of marks obtained and position, if any.	Subjects taken

*In case no division/class is awarded and only grading is done the conversion formula adopted may be mentioned.

7. Details of professional/practical training and research experience, specifying the period and number of papers published, previous employment, if any, with name and address of the employer, with date of employment.

8. Nature of the present employment with date of appointment, designation and the name & address of the employer.

9. Names, designation and address of two referees who are familiar with the work of the scholar (NB : Candidates called for interview will have to bring with them the comments of both the referees).

10. Have you been abroad? If so, give full particulars of the country and the year & date of return to India.

11. Proposed programme of study/Research/training, specifying

(i) the work at present engaged in.

(ii) nature & programme of study/research/training desired.

(iii) future plans/prospects after the proposed studies/research/training; and

(iv) how are these related to the advancement of knowledge/Science and Technology in India?

Place : SIGNATURE OF THE CANDIDATE

Date :

davp 511/41/94

Theses of the Month

(*Contd. from page 34*)

12. Shamsher Singh. **Problems and prospects of growth of sericulture in Himachal Pradesh.** HP.

13. Sheeba Manzoor. **An appraisal of managerial performance of Oil and Natural Gas Commission.** AMU. Prof Nafees Baig, Department of Commerce, Aligarh Muslim University, Aligarh.

14. Sylvanus, Uwah Alozie. **Human resource development in nationalised banks in India, 1975-1985.** Nagpur. Dr S V Khandewale, Department of Economics, Nagpur University, Nagpur.

15. Verma, Ramnaval. **Bastar Sambhag mein vipanan ke kshetra mein prachalit arthik aniyamittayon ka vishleshnatmak adhyayan : Deergha kaleen sambhavnayon evam sudharon ke pripreksya mein.** Ravishankar. Dr D K Pathak, Co-ordinator, National Service Scheme, Pt Ravishankar Shukla University, Raipur.

HOME SCIENCE

1. Bhargava, Monica. **Study of nutritional status of tribals of Sidhi and Shahdol Districts.** Barkatullah. Dr M P Dwivedi, 33-MIG Satguru Complex, Berasia Road, Bhopal.

2. David, Alka. **Uchch samajik arthik star kee kamkaji va akamkaji matayon ke kishore balikayon ke atma pratyaya tatha upalabdhi abhiprerna ka tulnatmak adhyayan.** Durgawati. Dr (Smt) K Bhatara, Prof, Hawabagh Women's College, Jabalpur.

MANAGEMENT

1. Basu, Chandan Kumar. **The post training vocational success in TRYSEM- trained rural youth in Burdwan District, West Bengal : A study in psycho-social variables.** Burdwan. Dr S K Sengupta, Reader, Department of Business Administration, University of Burdwan, Burdwan.

2. Dardi, Jai Dev. **Management of working capital in Central India Machinery Manufacturing Company Limited, CIMMCO, from 1975 to 1985.** Jiwaji. Dr J C Varshney, Reader, Department of Commerce, Jiwaji University, Gwalior.

3. Rathnam, V G. **An analysis of formulation of action plans for managing competition in Indian industries.** Bangalore. Dr K Aswathappa, Department of Commerce and Management, Bangalore University, Bangalore.

4. Sandri, Prem. **Success of entrepreneurship development programmes : An evaluative study.** Osmania.

5. Srivastav, Avinash Kumar. **Study of organizational climate, role stress and coping strategy amongst public sector executives.** Bangalore. Dr K Aswathappa, Department of Commerce and Management, Bangalore University, Bangalore.

CLASSIFIED ADVERTISEMENTS

CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN

NUVEM, SALCETTE-GOA. 403604

Applications with full bio-data are invited for the following posts so as to reach the Principal **within 15 days** from the date of publication of this advertisement for the year 1994-95

Applications must be accompanied by certified copies of marksheets of all the examinations from SSC onwards. Those already employed, shall forward their applications through proper channel and shall account for breaks if any in their academic career

I. CATEGORY OF POSTS : OPEN

Full-time Lecturer in Computer Awareness - 1 Post

QUALIFICATIONS :

a) M E./M.Tech in Computer Science or Electronics with 55% marks and good academic record.

OR

b) M.C.A or M.Sc in Computer Science or Electronics with 55% marks and good academic record.

OR

c) M.Sc Statistics or Mathematics with 55% marks and good academic record with exposure to Computer Science

Candidates applying for Lecturer's post must have passed the Eligibility test for Lectureship conducted by the UGC, CSIR or similar test accredited by the UGC. However, if such candidates are not available or found suitable, general category candidate will be appointed on temporary basis and the appointment will not be confirmed till the candidate passes the National Eligibility Test.

Scale of Pay : Rs. 2200-75-2800-100-4000 plus admissible allowances as per rules.

Terms and conditions of service are those laid down by the Goa University/ Directorate of Education, Goa, and other competent Authorities.

Sr. M. Rosanne A.C.
PRINCIPAL

महर्षि दयानन्द सरस्वती विश्वविद्यालय

अजमेर

क्रमांक : एफ – 1 संस्था/मदसविवि/94/
10197 दिनांक : 13-9-94

संशोधन पत्र

विश्वविद्यालय के विज्ञापन संख्या 3/94 दिनांक 12-7-94 द्वारा विभिन्न शैक्षिक पदों पर नियुक्ति हेतु आवेदन पत्र निर्धारित प्रपत्र में दिनांक 31-8-94 तक आमंत्रित किये गये थे । उपरोक्त पदों हेतु आशार्थी अब अपन आवेदन पत्र दिनांक 30 सितम्बर, 1994 तक कुलसचिव, महर्षि दयानन्द सरस्वती विश्वविद्यालय, अजमेर को प्रेषित कर सकते हैं ।

कुलसचिव

SHRI GURUDEO AYURVED COLLEGE

Gurukunj Ashram
Distt. Amravati

WANTED

Applications are invited for the following posts

1) **Professor for the Deptt. of Samhita and Siddhant** : Reserve for S.C. (IIIrd time)

2) **Professor for the Deptt. of Rasashastra**: Open

3) **Professor for the Deptt. of Kayachikitsa** : Open

4) **Lecturer for the Deptt. of Sharirrachana : Reserve for S.T. (IInd time)**

1. **Qualification and Experience** : As per C.C.I.M. & Govt. Rules.

2. **Pay Scale** : As per UGC/Govt. Rules.

3. **Mode of Applications** :

(I) Application on plain paper with complete Bio-data giving details of Qualifications & experience alongwith true copies of testimonial should reach the undersigned on or before 6/10/94. Send postal order of Rs. 10/- alongwith Application.

(II) The candidate will have to appear for interview at his own cost alongwith all original certificates.

(III) The in-service candidates (other than of own institution) should submit their applications through proper channel alongwith 'NO OBJECTION' certificate from the employer.

On non-availability of suitable B.C. candidates, the post will be filled in from open catagory candidates purely on temporary basis as per provisions of Amravati University Direction No. 2 of 1990.

Note : The candidates who had applied before 1-8-94, need not apply again.

Shri S.H. Chavan
SARVADHIKARI
A.B. Shri Gurudeo Sevamandal
Gurukunj Ashram, Distt. Amravati

P.P. Palekar
PRINCIPAL

Devi Shreevani Education Society's

MAHADEVRAO SALGAOCAR COLLEGE OF LAW

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P.O. Caranzalem, Goa
(Affiliated to Goa University)

Applications are invited for one post of Full-time Lecturer in Law in the pay scale of Rs. 2200-75-2800-EB-100-4000.

Qualifications : Good academic record with atleast 55% marks or an equivalent grade at Master's Degree in Law.

Candidates besides fulfilling the above qualifications should have cleared the eligibility test for Lecturers. A full-time Lecturer is not permitted to practise Law.

In addition to pay, allowances will

be paid according to the rules of Goa University and Goa Government.

Applications with full bio-data accompanied by copies of certificates and statement of marks right from SSC examination must reach the Principal **within 15 days** from the date of publication of this advertisement. Candidates who are already employed shall send their applications through proper channel.

PRINCIPAL

AL-AMEEN COLLEGE

Edathala, Aluva

WANTED

Lecturer in Commerce - Open Merit

Part-time Law Lecturer in Commerce - Open Merit

Lecturer in Hindi - Open Merit (Subject to concurrence from D.C.E.)

Age and Qualification - As per rules of the Mahatma Gandhi University and the Government of Kerala.

Apply to the Principal **within 30 days** of this notification.

Application form can be had from the College Office on payment of Rs. 50/- in person or Rs. 60/- by D.D. or M.O.

PRINCIPAL

DEMPO CHARITIES TRUST

Dempo House, Campal, Panaji.
Goa-403 001

Applications are invited for the post of

PRINCIPAL

of

SRINIVASSA SINAI DEMPO COLLEGE
OF COMMERCE & ECONOMICS
(Affiliated to University of Goa)
Altinho, Panaji, Goa.

Minimum Qualifications : Minimum ten years of approved teaching experience as a Lecturer at Undergraduate/Postgraduate level.

Scale of Pay : 3700-125-4950-150-5700 plus admissible allowances as per Goa Government rules.

Date of Joining : March 01, 1995.

Application should contain the information on the following points : Full Name, Date of Birth, Designation of the post held, Academic Qualifications, Teaching and Administrative Experience, List of Papers written/read in the Seminars/Conferences etc.

Application alongwith copies of statements of Marks secured at :

1. (i) S.S.C.
   (ii) Intermediate/H.S.S.C.E.
   (iii) B.Com./B.A.
   (iv) M.Com./M.A. Examination

2. Xerox copy of any higher degree secured.

3. Certified xerox copy of approval granted by the University at the time of appointment in the affiliated Colleges.

4. Experience Certificate.

Application should be sent through proper channel **within 20 days** of publication of this Advertisement.

TRUSTEE

DEPARTMENT OF DISTANCE EDUCATION
KURUKSHETRA UNIVERSITY, KURUKSHETRA

ADMISSION NOTICE

Applications are invited for the following Correspondence courses for one year duration.

(1) Dip. in Lib. & Inf. Sc. (170 Seats)

Eligibility Matric/Hr. Sec./10+2. Should be working in Libraries/ Information Centres etc. Female candidates are exempted from the requirement of experience. Medium : Hindi

(2) B. Lib & Inf. Sc. (75 Seats)

Eligibility : Bachelor's Degree with 5 years experience in the profession. The candidates who have passed Dip. in Lib. & Inf. Sc. are exempted from the requirement of experience. Medium : English

(3) M. Lib. & Inf. Sc. (25 Seats):

Eligibility · B Lib & Inf. Sc. with 5 years experience in the profession.

Medium : English

(4) P.G. Dip. in Computer Applications (100 Seats)

Eligibility : Bachelor's Degree. Medium : English

For courses at Sr. No. 1 to 3, the seats will be filled up on 'First Come First Served basis' while for Sr No. 4 on merit basis

Last Date : 15.10.1994 with late fee of Rs. 200/-

The other courses available through Department of Distance Education for which dates with late fee have not been over are as under :-

(A) B.A/B Com Part -1 - Eligibility · 10 + 2 Exam.
(B) Bachelor of General Laws (2 Year)
(c) M.A. English, Hindi, Sanskrit, Punjabi, Pol Sc., Pub. Adm., Economics, History and Mathematics (2 year)
(D) Post-Graduate Diploma in :
  (i) Company Law (1 Year)
  (ii) Tour & Travel Management (1 Year)
  (iii) Journalism & Mass Communication (1 Year)
  (iv) Marketing Management (2 Year)

Eligibility : (For B to D) · Bachelor's Degree

(E) B.Ed Eligibility : Bachelor's Degree. Male Candidates should have two years' teaching experience.
(F) M.Ed Eligibility : B.Ed Degree. Male candidates should have one year teaching experience

For courses other than B.Ed/M.Ed the Prospectus with forms can be obtained from the Manager (P&P), Kurukshetra University, Kurukshetra by remitting to him a sum of Rs. 40/- through Bank Draft/ IPOs drawn in favour of Registrar, Kurukshetra University. For B.Ed/ M.Ed. a sum of Rs. 110/- should be remitted. Candidates should send two address slips with their request for the supply of Prospectus, indicating clearly the name of the course.

DIRECTOR

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